ICOR LTD

January 31, 2019

Commonwealth of Virginia Department of Environmental Quality
Northern Regional Office: Petroleum Remediation
13901 Crown Court
Woodbridge, Virginia 22193

Attention: Mr. Alexander Wardle, Project Manager

Subject: **Corrective Action Plan**, Former Robinson Terminal North Property, 500 and 501 North Union Street, Alexandria, Virginia

Reference: VDEQ PC No. 2016-3090
VRP Site No. 00673
ICOR Project No. 18-RP.001

Dear Mr. Wardle:

Enclosed for your review is the *Corrective Action Plan* (CAP) detailing the corrective actions proposed by ICOR, Ltd. to address soil and groundwater impacts at the Former Robinson Terminal North property (SITE) located at 500 and 501 North Union Street in Alexandria, Virginia. The CAP was prepared at the request of Alexandria North Terminal, LLC (ANT). The corrective actions, and associated engineering and institutional controls, will be implemented in conjunction with and after proposed development of the SITE. The proposed development has not been finalized, but is anticipated to include construction of mixed residential, retail, and commercial use multi-story structures. There is a possibility that a large sewer overflow structure may be constructed on the northern portion of the 501 Parcel; however, the final location of such structure has not been finalized and could also be located outside the limits of the SITE. The SITE is currently improved with two 1-story, slab-on-grade brick, concrete, and steel warehouses, a large concrete dock (pier), railroad spur, a small wood-frame shed (near the dock), gravel and asphalt and concrete-paved parking areas, and landscaping. The SITE is currently vacant and access to most open areas is limited by security fencing.

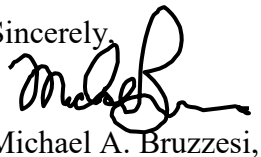
The CAP was prepared to address a Commonwealth of Virginia Department of Environmental Quality (VDEQ) Petroleum Storage Tank Program (PSTP) directive dated August 10, 2018, associated with Pollution Compliant Number 2016-3090. The CAP also satisfies many of the requirements for a Remedial Action Work Plan (RAWP) associated with the VDEQ's Voluntary Remediation Program (VRP). The SITE was investigated, and corrective actions will be implemented jointly, through the PSTP and VRP. The SITE was entered into the VRP in 2016 and was assigned VRP Number 00673. The SITE was entered into the VRP to address non-petroleum impacts, which are not typically addressed through the PSTP. Corrective actions, engineering controls, and institutional controls proposed in the CAP were selected based on the findings of a Site Characterization Study, two Post Site Characterization Monitoring events, and Risk Assessment.

PO Box 406 ▪ Middleburg, VA 20118 ▪ Office (703) 257-1225 ▪ Fax (703) 257-1226

After a definitive development plan is established for the SITE, a RAWP will be prepared and submitted to the VRP. The RAWP will provide more specific details concerning corrective actions, engineering controls, and institutional controls proposed for implementation in this CAP in conjunction with and post development. A copy of the RAWP will also be submitted to the PSTP. The corrective actions, engineering controls, and institutional controls will be tailored to each parcel's proposed use. It is the intention of ANTto obtain a Case Closure Letter from the PSTP and a "Certification of Satisfactory Completion of Remediation" from the VRP for each parcel comprising the SITE following successful completion of the corrective actions, implementation and incorporation of the engineering controls. Restrictive covenants will be recorded with the Certification of Satisfactory Completion of Remediation to implement the institutional controls.

If you have any questions or comments concerning the CAP, please feel free to call me at (703) 608-5969.

Sincerely,



Michael A. Bruzzesi, CPG
Senior Geologist/Project Manager
VA CPG No. 2801 001428

Attachment
Corrective Action Plan

cc: Mr. Vincent Maiden, VDEQ, Brownfields Program Coordinator
Mr. Greg Hoffman, Alexandria North Terminal, LLC
Mr. Jim Thornhill, McGuire Woods, LLP
Mr. William Skrabak, City of Alexandria

CORRECTIVE ACTION PLAN

FORMER ROBINSON TERMINAL NORTH PROPERTY
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VIRGINIA

VDEQ VRP# 00673
VDEQ PC# 2016-3090

Prepared for:

Commonwealth of Virginia Department of Environmental Quality
Northern Regional Office: Petroleum Remediation
13901 Crown Court
Woodbridge, Virginia 22193
(703) 583-3822

On Behalf of:

Alexandria North Terminal, LLC
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Prepared by:

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Middleburg, Virginia 20118
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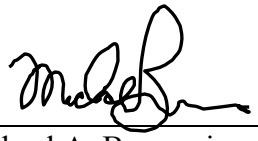
ICOR Project No. 13-RP.01

JANUARY 31, 2019

SIGNATURE SHEET

The Corrective Action Plan (CAP) was prepared by:



January 31, 2019

Michael A. Bruzzesi Date
Senior Geologist/Project Manager
VA CPG No. 2801 001428

The CAP was reviewed and approved for release by:

January 31, 2019

Ike L. Singh Date
Program Manager

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LIST OF ACRONYMS AND ABBREVIATIONS

ACP	Atlantic Coastal Plain
ANT	Alexandria North Terminal, LLC
ATGS	Alexandria Town Gas Site
Bogle	R.H. Bogle
CAP	Corrective Action Plan
City	City of Alexandria
COPC	constituent of potential concern
CSM	Conceptual Site Model
ECS	ECS Mid-Atlantic, LLC
EPA	United States Environmental Protection Agency
ICOR	ICOR, Ltd.
MFG	manufactured gas plant
mg/kg	milligram per kilogram
mg/l	milligram per liter
MTBE	methyl tertbutyl ether
O&G	oil and grease
PC#	Pollution Compliant number
PCB	polychlorinated biphenyl
PCE	tetrachloroethene
PID	photo-ionization detector
PPL	Priority Pollutant List
PSCM	Post Site Characterization Monitoring
PSTP	Petroleum Storage Tank Program
QEP	qualified environmental professional
RA	Risk Assessment
RAWP	Remedial Action Work Plan
RAR	Risk Assessment Report
RL	analytical method reporting limit
SCR	Site Characterization Report
SCS	Site Characterization Study
SVOC	semi-VO
TCE	trichloroethene
TCL	Target Compound List
TCLP	Toxic Characteristic Leaching Procedure
TPH	total petroleum hydrocarbons
TPH-DRO	diesel range TPH
TPH-GRO	gasoline range TPH
ug/kg	microgram per kilogram
ug/l	microgram per liter
UST	underground storage tank
VDEQ	Commonwealth of Virginia Department of Environmental Quality
VDEQ-PDS	VDEQ general permit discharge standard for petroleum contaminated water
VDEQ-PSSS	VDEQ petroleum saturated soil standards

VDEQ-T2PWSSL	VDEQ Tier II public water supply screening level
VDEQ-T2RSL	VDEQ Tier II residential soil screening level
VDEQ-T2SWFSL	VDEQ Tier II surface water fresh screening level
VDEQ-T3CDSL	VDEQ Tier III construction direct (<15 feet) screening level
VDEQ-T3CGSL	VDEQ Tier III industrial groundwater vapor intrusion screening level
VDEQ-T3CSG	VDEQ Tier III construction soil gas screening level
VDEQ-T3IDSG	VDEQ Tier III commercial deep soil gas screening level
VDEQ-T3ISL	VDEQ Tier III industrial soil screening level
VDEQ-T3ISSG	VDEQ Tier III industrial shallow/sub-slab soil gas screening level
VDEQ-T3RDSG	VDEQ Tier III residential deep soil gas screening level
VDEQ-T3RGSL	VDEQ Tier III residential groundwater vapor intrusion screening level
VDEQ-T3RSSG	VDEQ Tier III residential shallow/sub-slab soil gas screening level
VI	vapor intrusion
VOC	volatile organic compound
VOV	volatile organic vapor
VRP	Voluntary Remediation Program

1.0 INTRODUCTION

This *Corrective Action Plan* (CAP) details the corrective actions proposed by ICOR, Ltd. (ICOR) to address soil and groundwater impacts at the Former Robinson Terminal North property (herein referred to as the SITE) located at 500 and 501 North Union Street in Alexandria, Virginia. The CAP was prepared at the request of Alexandria North Terminal, LLC (ANT). The corrective actions, and associated engineering and institutional controls, will be implemented in conjunction with and after proposed development of the SITE. The proposed development has not been finalized, but is anticipated to include construction of mixed residential, retail, and commercial use multi-story structures. There is a possibility that a large sewer overflow structure may be constructed on the northern portion of the 501 Parcel; however, the final location of such structure has not been finalized and could also be located outside the limits of the SITE. The SITE is currently improved with two 1-story, slab-on-grade brick, concrete, and steel warehouses, a large concrete dock (pier), railroad spur, a small wood-frame shed (near the dock), gravel and asphalt and concrete-paved parking areas, and landscaping. The SITE is currently vacant and access to most open areas is limited by security fencing.

The CAP was prepared to address a Commonwealth of Virginia Department of Environmental Quality (VDEQ) Petroleum Storage Tank Program (PSTP) directive dated August 10, 2018, associated with Pollution Compliant Number (PC#) 2016-3090. The CAP also satisfies many of the requirements for a Remedial Action Work Plan (RAWP) associated with the VDEQ's Voluntary Remediation Program (VRP). The SITE was investigated, and corrective actions will be implemented jointly, through the PSTP and VRP. The SITE was entered into the VRP in 2016 and was assigned VRP Number 00673. The SITE was entered into the VRP to address non-petroleum impacts, which are not typically addressed through the PSTP. Corrective actions, engineering controls, and institutional controls proposed in the CAP were selected based on the findings of a Site Characterization Study (SCS), two Post Site Characterization Monitoring (PSCM) events, and Risk Assessment (RA).

After a definitive development plan is established for the SITE, a RAWP will be prepared and submitted to the VRP. The RAWP will provide more specific details concerning corrective actions, engineering controls, and institutional controls proposed in this CAP for implementation in conjunction with and post development. A copy of the RAWP will also be submitted to the PSTP. The corrective actions, engineering controls, and institutional controls will be tailored to each parcel's proposed use. It is the intention of ANT to obtain a Case Closure Letter from the PSTP and a "Certification of Satisfactory Completion of Remediation" from the VRP for each parcel comprising the SITE following successful completion of the corrective actions, implementation and incorporation of the engineering controls. Restrictive covenants will be recorded with the Certification of Satisfactory Completion of Remediation to implement the institutional controls.

A concise discussion of the site history and historical assessment findings is provided in the CAP. A detailed summary of the SITE use history was provided in the *Site Characterization Report* (SCR) prepared by ICOR and a detailed discussion of past assessment findings related to soil, groundwater, and soil gas conditions and risks to potential receptors was provided in the

SCR, two *Post Site Characterization Monitoring Reports* (PSCMRs), and *Risk Assessment Report* (RAR) prepared by ICOR.

2.0 SITE DESCRIPTION

The SITE is located at 500 and 501 North Union Street in Alexandria, Virginia, at the intersection of Oronoco Street and North Union Street. The SITE is comprised of two parcels, the 500 and 501 North Union Street parcels (herein referred to as the 500 and 501 Parcels, respectively), separated by North Union Street. The two parcels comprise approximately 3.2 acres of land. In past reports, the parcel addresses have also been listed as 1 and 101 Oronoco Street (corresponding to the 500 and 501 Parcels, respectively). A site location map is included as Figure 1. The SITE is situated in a mixed commercial and residential land use area. Adjacent property use is depicted on the aerial photograph included as Figure 2.

The SITE is currently improved with two 1-story, slab-on-grade brick, concrete, and steel warehouses (totaling approximately 91,800 square feet), a large concrete dock (pier), railroad spur, a small wood-frame shed (near the dock), gravel and asphalt and concrete-paved parking areas, and landscaping. The warehouses were constructed in 1966. The warehouse situated on the 500 Parcel is referred to as Warehouse #16. The warehouse situated on the 501 Parcel is referred to as Warehouse #10, #11, and #12. Three diesel underground storage tanks (USTs) were formerly buried on the northeastern portion of the 501 Parcel. The USTs were formerly used to store and dispense diesel fuel via two dispensers located on the east-central portion of the 501 Parcel (next to the small wood shed). The tanks and dispensers were removed in 2016. The SITE is currently vacant and access to most open areas is limited by security fencing. A site plan depicting existing conditions is included as Figure 3.

Topography at SITE is relatively flat. The SITE is bound to the north by Pendleton Street and railroad tracks across which is Oronoco Bay Park, to the east and northeast by Pendleton Street and by the Potomac River, to the south by Oronoco Street across which is Founders Park and a residential building, and to the west by Dalton Wharf Office Center and North Union Street. The portions of the SITE bounding the Potomac River slope moderately down to the river.

3.0 SITE DEVELOPMENT

The proposed development of the 500 and 501 Parcels has not been finalized, but may include construction of mixed residential, retail, and commercial use multi-story structures. The new structures may be slab-on-grade or include one or more levels of subsurface parking and will be constructed on poured-concrete foundations. Newly constructed buildings are expected to overlie the majority of the parcels, with walkways, patios, and landscaping covering the remaining open spaces. Current plans for the parcels include raising the grade several feet across much of the parcels to allow for final elevations above the flood zone. Construction for building footers and potential subsurface parking levels is anticipated to require excavation and removal of several or more feet of soil from the parcels. There is a possibility that Alexandria Renew Enterprises may construct a large sewer overflow structure on the northern portion of

the 501 Parcel that will involve significant excavation of that portion of the SITE; however, the final location of such structure has not been finalized and could also be located outside the limits of the SITE.

Prior to development of the SITE, all of the existing structures and associated site improvements are expected to be razed and removed with the exception of the pier the plans for which will depend on the redevelopment. Soil used to backfill and raise the grade of the parcels will be imported fill and/or soil generated during excavation at the SITE (assuming it is deemed acceptable by VDEQ standards for beneficial reuse). Most of the soil generated during excavation of 500 Parcel (for footers and/or subsurface parking levels) is not expected to meet VDEQ reuse criteria and will likely require special handling and disposal or treatment; however, soil excavated from "clean" areas and/or found to meet VDEQ reuse requirements may be reused on or off site as backfill.

Based on groundwater measurement data obtained from the SITE, subsurface parking levels, deep building footings, and deep subsurface utilities may be constructed at depths situated near or a few feet below the soil/groundwater interface (water table); thus, groundwater management during construction may be required. Groundwater management post-construction is not anticipated if the buildings are constructed above the water table or on a water-tight foundation ("bath tub" type); however, if the buildings are designed to include a foundation dewatering system, long-term management of groundwater will be required. Groundwater management anticipated during construction includes dewatering and/or use of engineering controls (e.g., slurry wall, sheeting and shoring, mudmat, etc.). Groundwater generated during construction dewatering and from foundation dewatering systems (if used) will likely require monitoring and potentially treatment before discharge to meet federal and state regulatory requirements.

4.0 SITE CHARACTERIZATION FINDINGS

A brief discussion of the SCS, PSCM, and RA findings is presented below. A detailed summary of the SITE use history was provided in the SCR and a detailed discussion of past assessment findings related to soil, groundwater, and soil gas conditions and risks to potential receptors was provided in the SCR, two PSCMRs, and RAR.

4.1 Historical Site Use and Regulatory Background

Historical and Adjacent Site Use

Based on the findings of historical studies, past site uses of concern at the 500 Parcel include bulk oil storage (1891-1941), fertilizer storage (1907-1912), chemical mixing plant operations (1941-1966), and warehouse operations (1966-2016). The VDEQ issued PC# 2016-3090 to the 500 Parcel in relation to the past bulk storage of oil at the parcel. Past site uses of concern at the 501 Parcel include coal storage (1885-1891), fertilizer and acid plant (1902-1941), sulfuric acid plant (1941-1968), and warehouse operations (1968-2016). The VDEQ issued PC# 2006-3131 to the 501 Parcel in relation to a suspected release of petroleum from USTs located on the parcel. The aforementioned past site operations included the storage and manufacturing of raw petroleum products and chemicals and generation of petroleum and chemical wastes.

Historic adjacent property uses of concern include fertilizer storage on the property to the south (1896-1912), city gas works and chemical manufacturing on the property to the southwest (1851-1959), and bulk oil storage (1891-1941) and chemical mixing plant operations (1941-1966) on the property to the west.

Bulk Petroleum Storage and USTs

In November 2005, a release of diesel fuel was suspected from one of the three former 8,000-gallon diesel USTs located near the northeast corner of the 501 Parcel. The tanks were in use at the time of the suspected release. Following the suspected release, all three of the tanks were precision (integrity) tested and all three were found to be sound. The VDEQ assigned the suspect release PC# 2006-3131 and requested that a SCS be performed. A SCS was conducted in April 2006 and included the advancement of 13 test borings (designated TEC-B1 through TEC-B13), installation of seven groundwater monitoring wells (designated TEC-MW1 through TEC-MW7), and collection of soil and groundwater samples for field and laboratory analysis. The wells were periodically checked for the presence of free product. The boring and well locations are depicted on Figure 4. Minor impacts to soil and groundwater were noted, with impacts appearing to be limited and localized. Free product was not observed in the monitoring wells. The limited and localized nature of impacts and relatively low detections of petroleum constituents in soil and groundwater did not warrant further assessment or cleanup and "Case Closure" of PC# 2006-3131 was recommended. The VDEQ concurred with the recommendation and closed PC# 2006-3131.

The three 8,000-gallon USTs were taken out of service in 2015. In March 2016, the three USTs were closed via excavation and removal. Minimal impacts were noted during removal of the tanks. Groundwater samples were collected for laboratory analysis from several existing downgradient groundwater monitoring wells as part of the tank closure. Based on conditions noted during tank removal and relatively low concentrations of constituents detected in soil and groundwater samples collected during tank closure, no further assessment and/or corrective actions deemed warranted.

In 2016, the VDEQ issued PC# 2016-3090 in relation to the past bulk storage of oil at the 500 Parcel. The vast majority of the bulk storage facility appears to have been located on the adjacent properties to the west of the 500 Parcel with most of the storage in large aboveground tanks. Past and recent assessments conducted at the 500 Parcel suggest soil and groundwater underlying this parcel has been impacted by petroleum. Further assessment of the impacts was performed as part of the SCS, as mandated by the VDEQ.

Historical documents suggest USTs may be buried beneath the southeastern portion of the 500 Parcel; however, no evidence of USTs (e.g., fillports, manways, vent pipes, etc.) were observed in the area. If USTs are unearthed during future development, they will be properly closed via excavation and removal with notification and approval by the VDEQ.

Chemical Manufacturing and Storage

The R.H. Bogle (Bogle) chemical manufacturing facility occupied land immediately west of the SITE, and potentially a portion of the 500 Parcel, between the 1940s and late 1950s. Bogle

reportedly mixed and stored sulfuric acids, fertilizers, and herbicides as part of its operations. Investigations ordered by the United States Environmental Protection Agency (EPA) and VDEQ in the 1970s revealed elevated levels of arsenic in soil, groundwater, and sediment. Impacts to soil and groundwater were interpreted to extend onto the western portion of the 500 Parcel. The last reported use of herbicides on the Bogle property was in 1968. The property immediately west of Parcel 500 is referred to as the Dalton Warf property. Studies of this property concluded the following:

- The majority of arsenic impacts occur within 15 feet of the surface.
- Artesian pressure in a deeper aquifer precludes downward movement of contaminants.
- The only significant movement of arsenic is due to soil erosion and surface water runoff.
- Most arsenic remaining in soil has probably become insoluble due to chemical reactions with soil constituents.
- The risks associated with impacts could be alleviated by developing the property using strict guidelines for architectural design and limiting disturbance of soil during construction.

In 1978 the Dalton Warf property was sold and subsequently developed into commercial office townhouses. Prior to construction, the most heavily-impacted areas were "capped" with 18-inches of iron-rich clay to prevent arsenic migration. Restrictions placed on future site development and incorporated into property deeds excluded basements and swimming pools, imposed strict dust control during construction, and required placement of polyethylene around buried utility lines.

The EPA investigated the former Bogle property in 1985 for the presence of 2,3,7,8-TCDD, a type of dioxin reportedly generated and used at the plant. The EPA collected 38 soil samples for laboratory analysis (including two soil samples on the 500 Parcel) and none were found to contain 2,3,7,8-TCDD above detectable levels. The EPA concluded that there was no indication that there is a threat of human exposure to dioxin at levels above concern for residential areas. Another dioxin concern noted was a potential release of dioxin from a railroad car containing dioxin-impacted water parked on the railroad spur of the SITE; however, impacts associated with this incident also appear to have been investigated by the EPA and addressed with no further assessment or cleanup required.

Numerous assessment and cleanup activities have been conducted by the City of Alexandria (the City) and continue to be conducted in relation to the former coal gasification facility referred to as the Alexandria Town Gas Site (ATGS). The ATGS was a former manufactured gas plant (MFG) and was located near the corner of North Lee and Oronoco Streets (southwest of the SITE). The MFG manufactured gas for heating, cooking, and lighting from 1851 through 1946. Soil and groundwater beneath the site was impacted by coal tar residues originating from the former MGP which was owned and operated by the City from 1851 until 1930. The plant was sold to a private company that later merged with Washington Gas. The plant continued to operate until it closed in 1947. Over the ensuing years, the site was gradually redeveloped into commercial warehouses and eventually the Lee Street Square office townhouses that remain today. The redevelopment of the surrounding area from its former industrial base to the current

mixed commercial and residential community also occurred during the 1950s through the 1970s.

As a part of its redevelopment of the Old Town area, the City installed a storm sewer pipeline beneath Oronoco Street in 1977. The storm water pipe runs beneath the street and past the former MGP site on its way to the Potomac River where it discharges via the Oronoco outfall, located near the northeast corner of City-owned Founders Park. Not long after the pipe was installed, coal tar residues were observed seeping from the river bottom off the outfall. The City's investigations found that the installation of the storm water pipeline had created a pathway linking the former MGP site with the river. In spite of the City's numerous efforts to stem the flow, coal tar continued to migrate from the MGP site to the river via the pipeline under-bedding and through holes and cracks in the pipe that carried coal tar-laden groundwater into the storm sewer and on to the river. Dissolved phase and dense, non-aqueous phase liquids (DNAPL) emerged from seeps on the river bottom off Oronoco outfall. Over the next 35 years, the on-going discharges impacted sediment off Oronoco outfall.

In 2000 the City entered the site in the VRP and installed a floating oil containment boom around the outfall to contain residues emerging from the seeps and to prevent their spread to other portions of the river. The installation of a cure in place liner inside the Oronoco pipeline in 2007 further slowed the migration of residues from the MGP. In 2013, the City installed a groundwater treatment system beneath Oronoco Street and the river to intercept and treat impacted groundwater as it migrates from the MGP site to the outfall. In the Summer of 2018, impacted sediments near the outfall were dredged and capped to further eliminate exposure pathways for human and ecological receptor populations.

Since 2003, the City has also actively recovered free product (coal tar) from the source area remaining beneath the northern edge of the former MGP site, adjacent to Oronoco Street. Because of coal tar's characteristics (non-volatile, viscous highly adsorptive, and environmentally persistent), the City concluded reducing concentrations in site media by meaningful levels beneath the entire impacted area is not feasible over the short term. Instead, the City believed that an acceptable level of risk reduction would be more effectively achieved by deploying a combination of institutional and engineering controls designed to mitigate risks without source removal. Further assessment is planned by the City to delineate impacts in soil, groundwater, and sediment and further cleanup and/or controls are planned to address these affected media.

Groundwater data collected during the assessment of the Bogle chemical manufacturing facility and ATGS suggests groundwater flow was historically and continues to be to the east and northeast, towards the Potomac River (and the SITE). The ATGS treatment system installed in 2013 is believed to intercept most of the remnant free product and impacted groundwater emanating from the ATGS. Prior to installation of the treatment system, migration of free product and impacted groundwater was not limited or controlled. Contaminants associated with the ATGS include volatile organic compounds (VOCs), semi-VOCs (SVOCs), and polynuclear aromatic hydrocarbons (PAHs). PAHs are a subset of SVOCs.

Historical Site Assessments

Numerous environmental studies have been conducted at the SITE over the years to assess soil and groundwater quality. A list of the major reports documenting the studies and their findings is provided below.

- **Evaluation of Groundwater Contamination at the R.H. Bogle Company Property**, Alexandria, Virginia, prepared by Dames & Moore, dated July 29, 1976.

- **A Final Report of R.H. Bogle Chemical Company**, prepared by NUS Corporation Superfund Division, dated July 14, 1983.

- **Tier 3 Dioxin Screening Investigation Report (Potomac Estuary Fish and Sediment Results)**, R.H. Bogle Co., Alexandria, Virginia, prepared by EPA, Region III, dated April 19, 1985.

- **Site Characterization Report**, Robinson Terminal, 1 Oronoco Street, Alexandria, Virginia, prepared by Total Environmental Concepts, Inc., dated January 25, 2007.

- **Soil and Groundwater Testing**, Robinson Terminal Warehouses, 500 and 501 N. Union Street, Alexandria, Virginia, prepared by ECS Mid-Atlantic, LLC (ECS), dated February 8, 2008.

- **Preliminary Subsurface Exploration and Geotechnical Engineering Analysis**, Robinson Terminal at Alexandria Waterfront, City of Alexandria, Virginia, prepared by ECS, dated February 14, 2008.

- **Phase I Environmental Site Assessment**, Robinson Terminal North, Alexandria, Virginia, prepared by WSP Environment & Energy, dated March 20, 2013.

- **Subsurface Exploration and Geotechnical Engineering Analysis**, Robinson Terminal North, Alexandria, Virginia, prepared by ECS, dated November 14, 2014.

- **Limited Phase II Environmental Site Assessment**, Robinson Terminal North, 1 and 101 Oronoco Street, Alexandria, Virginia, prepared by ICOR, dated December 15, 2014.

- **UST Closure Report**, Former Robinson Terminal North, 501 N. Union Street, Alexandria, Virginia, prepared by ICOR, dated April 18, 2016.

- **Site Characterization Report**, Former Robinson Terminal North, 500 and 501 N. Union Street, Alexandria, Virginia, prepared by ICOR, dated August 25, 2018.

- **First Post Site Characterization Report**, Former Robinson Terminal North, 500 and 501 N. Union Street, Alexandria, Virginia, prepared by ICOR, dated May 25, 2018.

- **Second Post Site Characterization Report**, Former Robinson Terminal North, 500 and 501 N. Union Street, Alexandria, Virginia, prepared by ICOR, dated July 22, 2018.

- **Risk Assessment Report**, Former Robinson Terminal North, 500 and 501 N. Union Street, Alexandria, Virginia, prepared by ICOR, dated November 26, 2018.

The assessment activities conducted to date include advancement of direct-sensing tooling to obtain real-time soil and groundwater data; advancement of test borings; installation of temporary and permanent groundwater monitoring wells; installation of soil gas sampling points; and collection of soil, groundwater, and soil gas samples for field screening and laboratory analysis. To date, test borings have been advanced at more than 65 locations at the SITE and 8 temporary and 20 permanent wells were installed at the SITE for environmental assessment and/or geotechnical purposes. In addition, "deep" groundwater samples were also collected from five locations and soil gas samples were collected from eight locations. The borings were advanced, wells were installed, and the deep groundwater samples were collected to delineate the horizontal and vertical extent of petroleum and other constituents of concern impacts to soil and groundwater. The soil gas samples were collected to evaluate the potential for vapor intrusion (VI) into existing and future structures. The boring, well, testing, and sampling locations were selected to assess areas where impacts would most-likely be expected (based on past and current SITE use and past adjacent and nearby property use) and to provide good spatial coverage of the SITE. The direct-sensing testing, boring, well, and soil gas sampling locations are depicted on Figure 4.

The findings of the assessments and studies related to soil, groundwater, and soil gas quality are discussed in Sections 4.3, 4.4, and 4.5, respectively.

A RAR was recently prepared by ICOR to address a VDEQ recommendation received by letter dated August 13, 2018. In the letter, the VDEQ acknowledged receipt, review, evaluation, and acceptance of the SCR and first PSCMR. Based on the acceptance of these reports, the VDEQ recommended that the next step in completing the VRP process be completed. The next step was preparation of a RA that contained an evaluation of risks to human health and the environment posed by impacts identified and documented during the site characterization process. The RA was completed and a RAR was submitted to the VRP and PSTP in November 2018. The findings of the RA are discussed in Section 4.6.

Constituents of Concern

Based on the findings of the SCS, PSCM events, and RA, constituents of concern are limited to gasoline and diesel range total petroleum hydrocarbons (TPH-GRO and TPH-DRO, respectively), VOCs, PAHs, and metals.

4.2 Geology and Hydrogeology

Topography at SITE is relatively flat and the elevation of the SITE is approximately 9 feet above mean sea level. The closest surface water body to the SITE is the Potomac River which bounds the 501 Parcel to the east and northeast. The portions of the 501 Parcel bounding the

Potomac River slope moderately down to the river. SITE and area topography and the location of the above-referenced surface water body are depicted on Figure 1.

The SITE is located within the Atlantic Coastal Plain (ACP) physiographic province. The ACP physiographic province is characterized by a series of south-easterly dipping layers of relatively consolidated sandy clay deposits, with lesser amounts of gravel. The ACP sediments are estimated to be approximately 250 feet thick and are underlain by the eastward continuation of crystalline bedrock of the Piedmont physiographic province. Portions of the SITE are underlain by Quaternary Age river terrace deposits, Cretaceous Age deposits of the Potomac Group, and fill. The Potomac Group deposits consist of interbedded layers of sand, silt, clay, and gravel.

Based on observations made during the historical and recent assessments, the upper 4 to 15 feet of the SITE is underlain by fill. The fill varied in composition, with sand, silt, clay, brick, asphalt, organics, wood, and gravel noted. Beneath the fill materials, alluvial soil characterized by interbedded and alternating layers of sand, silty sand, and sandy gravel with varying amounts of clay were encountered to a depth ranging from 45 to 55 feet below grade. Beneath the alluvial soil, marine clay of the Potomac Group was encountered and extended to the maximum explored depth of 80 feet below grade. The encountered soil was consistent with regional geology. Geologic cross-sections generated from the boring logs are included as Figures 5 through 8.

Based on groundwater measurements obtained from monitoring wells and findings of historical studies, the depth to groundwater at the SITE ranges from approximately 5 to 10.5 feet below grade and groundwater flow is to the east-northeast towards the Potomac River. The Potomac River is tidally influenced; however, data collected during a past study did not suggest that tidal change has a significant effect on groundwater flow. Groundwater contours generated from the most-recent groundwater sampling event (2018) are depicted on Figure 9. It should be noted that a semi-confined, lower water-bearing zone was encountered beneath the 500 Parcel. Groundwater monitoring well construction information and historical measurements obtained from the wells are summarized on Tables 2 and 3, respectively.

Groundwater is not currently used and is not proposed for use in the future as a potable drinking water or irrigation water supply at the SITE. Based on ICOR's past experience, groundwater in the City is not used or approved for use as a potable or irrigation water supply. Potable drinking water is provided to the SITE and surrounding area by the City. The City's potable water sources are surface water reservoirs.

4.3 Soil Quality

To date, more than 65 test borings have been advanced at the SITE for environmental assessment and/or geotechnical purposes. The boring locations are depicted on Figure 4. Soil quality was assessed through the collection of samples for visual inspection, field screening, and laboratory analysis and targeted soil in areas where impacts would most-likely be expected based on past SITE use and past adjacent and nearby property use. More than 100 soil samples were collected for laboratory analysis during advancement of the borings. A comprehensive list of the test borings, general test boring information, observations made during advancement,

and types of samples collected is provided on Table 1. The soil analytical results (detections only) for the samples are presented on Tables 4A through 4E. The soil analytical results were compared to the most-current VDEQ Tier II residential soil screening levels (VDEQ-T2RSLs) and VDEQ Tier III industrial soil screening level (VDEQ-T3ISLs). TPH concentrations were compared to VDEQ petroleum saturated soil standards (VDEQ-PSSSs). It should be noted that VDEQ screening levels have not been developed for many of the target constituents detected.

Strong to faint petroleum and chemical odors and/or elevated PID readings were noted during advancement of test borings TEC-B6 (6.6-7.6 feet below grade), TEC-B9 (12-14 feet below grade), ICOR-SB2 (3-10 feet below grade), ICOR-SB3 (10-12 feet below grade), ICOR-SB6 (12-15 feet below grade), ICOR-SB7 (5-15 feet below grade), ICOR-SB8 (1-15 feet below grade), ICOR-SB9 (2-6 feet below grade), ICOR-SB7 (2.5-7 feet below grade), MiHpt-7 (5-8 feet below grade), MiHpt-8 (11.5-12 feet below grade), MiHpt-13 (4-5 feet below grade), MiHpt-19 (1-5 feet below grade), MiHpt-20 (13.5-15 feet below grade), MiHpt-21 (5-10 feet below grade), MiHpt-22 (7-28.5 feet below grade), MW-23 (11-12 feet below grade), MW-24 (18-19 feet below grade), and MW-25 (9-19 feet below grade). Observations made during advancement of the test borings are summarized on Table 1. Soil samples collected from the SITE were analyzed for some or all of the following analysis: TPH-GRO, TPH-DRO, oil and grease range total petroleum hydrocarbons (O&G), VOCs, SVOCs, polychlorinated bipheyls (PCBs), pesticides, herbicides, the dioxin 2,3,7,8-TCDD, and metals. Based on the type and concentration of metals detected, some of the samples were additionally analyzed for Toxic Characteristic Leaching Procedure (TCLP) metals and chromium VI. A list of sampling depths and type of analysis performed on each sample are provided on Table 1.

TPH-GRO, TPH-DRO, 10 VOCs, 20 SVOCs, 1 PCB, 3 pesticides, 1 herbicides, 2,3,7,8-TCDD, and 12 metals were detected in the soil samples at concentrations above the analytical method reporting limit (RL). Seven VOCs, 17 SVOCs, and 10 metals were detected at concentrations above VDEQ screening levels. Detections above VDEQ screening levels were noted in both surface and subsurface soil. PCBs, pesticides, herbicides, and the dioxin 2,3,7,8-TCDD were not detected above VDEQ screening levels and no detections of TPH-GRO and TPH-DRO were above VDEQ-PSSSs. A list of the constituents detected above screening levels is detailed below.

Constituents Detected Above VDEQ-T2RSLs

- **VOCs** - benzene, cyclohexane, naphthalene, tetracholoroethene (PCE), 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and xylenes.
- **SVOCs** – acenaphthene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, biphenyl (diphenyl), dibenz(a,h)anthracene, dibenzofuran, fluoranthene, fluorene, indeno(1,2,3-c,d)pyrene, 2-methylnaphthalene, naphthalene, phenanthrene, and pyrene.
- **Metals** – antimony, arsenic, cadmium, copper, lead, mercury, selenium, silver, thallium, and zinc.

Constituents Detected Above VDEQ-T3ISLs

- **SVOCs** – benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, biphenyl (diphenyl), dibenz(a,h)anthracene, dibenzofuran, indeno(1,2,3-c,d)pyrene, and naphthalene.
- **Metals** – arsenic, lead, mercury, and thallium.

Three samples with elevated concentrations of total metals were also analyzed for TCLP metals to evaluate the leachability of the metals and disposal characteristics. Arsenic, barium, cadmium, and lead were detected as TCLP metals. The concentrations of TCLP arsenic and lead were at concentrations that may require specialized disposal of the soil if disturbed. The elevated TCLP concentrations were noted in samples collected from 2 to 4.5 feet bgs from borings ECS-B7 and ECS-B8. One of the samples that contained elevated concentrations of chromium was also analyzed for chromium VI. Chromium VI was not detected in the sample; thus, the type of chromium present at the SITE is likely chromium III (the least hazardous type).

Isoconcentration maps prepared from historical soil analytical data for TPH-GRO, TPH-DRO, benzene, naphthalene, and arsenic are included as Figures 10 through 14. With the exception of arsenic, the maps provide maximum concentrations of constituents for three soil intervals, 0-5, 5-10, and 10-15 feet below grade. Since most of the arsenic samples were collected within the upper 5 feet of soil underlying the SITE, the arsenic isoconcentration map only shows the maximum concentration detected within this interval. Areas where elevated concentrations of arsenic (above 300 milligrams per kilogram) and petroleum constituents were noted are depicted on Figure 15. Most of the detections of note were experienced on the 500 Parcel.

The most significant impacts appear to be associated with VOCs, PAHs, and metals and extend from the surface into the shallow subsurface (upper 10-20 feet). The more elevated concentrations were noted on the western portion of the SITE (500 Parcel). The impacts may be associated with the past use of the SITE for bulk oil storage, fertilizer storage, coal storage, chemical mixing and manufacturing, and/or warehouse operations. These areas also correspond to the SITE property boundaries with the majority of the former bulk storage and Bogle chemical manufacturing facility (western property boundary) and ATGS's Oronoco Street outfall treatment system (southern property boundary). The aforementioned off-site properties of concern are hydraulically upgradient of the SITE and have documented soil and groundwater impacts, some of which are at a higher degree and extent then noted at the SITE (e.g., arsenic impacts along the western property boundary); thus, the off-site properties may be a source and/or contributor to impacts noted at the SITE.

The concentrations of constituents detected in soil indicate special handling and off-site disposal of disturbed soil is warranted during development; however, some of the disturbed soil is expected to meet beneficial reuse requirements as backfill and may be used as such.

4.4 Groundwater Quality

To date, 8 temporary groundwater monitoring wells and 17 permanent groundwater monitoring wells were installed at the SITE. In addition, "deep" groundwater samples were collected from

five locations. The well locations were selected to assess areas where impacts would most-likely be expected based on past and current SITE use and past adjacent and nearby property use, provide good spatial coverage of the SITE, and target locations and zones deemed impacted and worthy of further assessment based on the findings of the real-time delineation. The well and deep groundwater sampling locations are depicted on Figure 4. Well construction information for the wells is provided on Table 2.

Groundwater is present beneath the SITE at depths ranging from approximately 5 to 10.5 feet below grade. Groundwater measurement data collected from the SITE is provided on Table 3. Historical groundwater data indicates groundwater flow is to the east-northeast (towards the Potomac River). A groundwater contour map prepared from the most-recent data is included as Figure 9. Groundwater is not believed to be tidally influenced.

Petroleum odors were noted during collection of groundwater samples from wells MiHpt-5, MiHpt-7, MiHpt-14, MiHpt-15, MiHpt-20, MiHpt-21, MiHpt-22, and MW-25. Odors were not observed in the deep groundwater samples. Shallow and deep groundwater samples collected from the SITE were analyzed for some or all of the following analysis: TPH-GRO, TPH-DRO, TPH, O&G, VOCs, SVOCs, PCBs, pesticides, herbicides, and total and dissolved metals. The historical groundwater analytical results are summarized on Tables 5A through 5F.

The groundwater analytical results were compared to the most-current VDEQ Tier III residential groundwater vapor intrusion screening levels (VDEQ-T3RGSLs), VDEQ Tier III industrial groundwater vapor intrusion screening levels (VDEQ-T3IGSLs), VDEQ Tier III construction direct (<15 feet) screening levels (VDEQ-T3CDSLs), general permit discharge standard for petroleum contaminated water (VDEQ-PDS), VDEQ Tier II public water supply screening levels (VDEQ-T2PWSSLs), and VDEQ Tier II surface water fresh screening levels (VDEQ-T2SWFSLs). It should be noted that VDEQ groundwater and surface water screening levels have not been developed for many of the target constituents detected.

Shallow Groundwater

PCBs and pesticides were not detected above RLs in the shallow groundwater samples. TPH-GRO, TPH-DRO, 15 VOCs, 16 SVOCs, 3 herbicides, and 13 metals were detected in the shallow groundwater samples at concentrations above the RL. TPH-GRO, TPH-DRO, 9 VOCs, 4 SVOCs, 1 herbicide, and 9 metals were detected at concentrations above VDEQ groundwater and/or surface water screening levels. A list of the constituents detected above screening levels is detailed below.

Constituents Detected Above VDEQ-T3RGSLs

- **VOCs** – benzene, chloroform, cyclohexane, ethylbenzene, naphthalene, PCE, tricholoroethene (TCE), and xylenes.
- **SVOCs** - biphenyl (diphenyl) and naphthalene.
- **Metals** - mercury.

Constituents Detected Above VDEQ-T3IGSLs

- **VOCs** – benzene, chloroform, cyclohexane, ethylbenzene, naphthalene, PCE, and TCE.
- **SVOCs** - naphthalene.
- **Metals** - mercury.

Constituents Detected Above VDEQ-T3CDSLs

- **VOCs** – benzene, chloroform, naphthalene, PCE, TCE, and xylenes.
- **SVOCs** - biphenyl (diphenyl), naphthalene, and pentachlorophenol.
- **Herbicides** – MCPP**.**
- **Metals** – arsenic, beryllium, cadmium, copper, and mercury.

Constituents Detected Above VDEQ-PDS

- **TPH-GRO**.
- **TPH-DRO**.
- **VOCs** – benzene, methyl tertbutyl ether (MTBE), ethylbenzene, naphthalene, PCE, TCE, toluene, and xylenes.
- **SVOCs** - naphthalene.

Constituents Detected Above VDEQ-T2PWSSLs

- **VOCs** – benzene and PCE.
- **SVOCs** – 2,4-dichlorophenol and pentachlorophenol.
- **Metals** – antimony, arsenic, cadmium, copper, lead, nickel, selenium, thallium, and zinc.

Constituents Detected Above VDEQ-T2SWFSLs

- **VOCs** – benzene and PCE.
- **SVOCs** – 2,4-dichlorophenol and pentachlorophenol.
- **Metals** – arsenic, cadmium, copper, lead, nickel, selenium, thallium, and zinc.

Deep Groundwater

TPH-GRO, TPH, and O&G were not detected above RLs in the deep groundwater samples. TPH-DRO, five VOCs, and three SVOCs were detected in the deep groundwater samples at concentrations above the RL. One VOC (naphthalene) was detected at concentrations above VDEQ-T3CDSLs. No detections above VDEQ-T3RGSLs, VDEQ-T3IGSLs, VDEQ-PDS, VDEQ-T2PWSSLs, and VDEQ-T2SWFSLs were noted.

In general, the concentration of constituents detected in groundwater appears to be relatively stable and is concentrated in the shallow subsurface. Isoconcentration maps prepared from groundwater analytical data collected during the two most-recent permanent well sampling events for TPH-GRO, TPH-DRO, benzene, naphthalene, and arsenic (for shallow and deep groundwater if collected) are included as Figures 15 through 19.

The most significant impacts appear to be associated with VOCs, SVOCs, and metals. The more elevated levels were observed on the western and southern portions of the SITE. The impacts may be associated with the past use of the SITE for bulk oil storage, fertilizer storage, coal storage, chemical mixing and manufacturing, and/or warehouse operations. These areas also correspond to the SITE property boundaries with the majority of the former bulk storage and Bogle chemical manufacturing facility (western property boundary) and ATGS's Oronoco Street outfall treatment system (southern property boundary). The aforementioned off-site properties of concern are hydraulically upgradient of the SITE and have documented soil and groundwater impacts, some of which are at a higher degree and extent then noted at the SITE (e.g., arsenic impacts along the western property boundary); thus, the off-site properties may be a source and/or contributor to impacts noted at the SITE.

4.5 Soil Gas Quality

To date, four sub-slab and four deep soil gas samples were collected from the SITE. The sub-slab samples were collected from the 500 Parcel and the deep soil gas from the 501 Parcel. The soil gas sampling locations are depicted on Figure 4. The soil gas samples were biased to locations where the highest degree of VOC impact was noted during the real-time tooling assessment and follow-up soil and groundwater sampling. Sub-slab sampling was selected for the 500 Parcel because the development of this parcel at the time of sampling was anticipated to be slab-on-grade construction. The type of soil gas sampling performed is not expected to have much bearing on the findings since the water table at this parcel and SITE in general is relatively shallow (ranges from approximately 5 to 10 feet below grade). Sampling protocols were consistent with those recommended in VRP guidance documents.

The sub-slab and deep soil gas analytical results are summarized on Tables 6 and 7, respectively. The sub-slab soil gas analytical results were compared to the most-current VDEQ Tier III residential and industrial shallow/sub-slab soil gas screening levels (VDEQ-T3RSSGs and VDEQ-T3ISSGs, respectively) and the deep soil gas samples were compared to the most-current VDEQ Tier III residential and industrial deep soil gas screening levels (VDEQ-T3RDSGs and VDEQ-T3IDSGs, respectively) and VDEQ Tier III construction soil gas screening levels (VDEQ-T3CSGs).

Sub-Slab Soil Gas
A total of 14 VOCs were detected above RLs in the sub-slab soil gas samples. None of the VOCs were detected at concentrations exceeding VDEQ-T3RSSGs and VDEQ-T3ISSGs.

Deep Soil Gas
A total of 19 VOCs were detected above RLs in the sub-slab soil gas samples. None of the VOCs were detected at concentrations exceeding VDEQ-T3RDSGs, VDEQ-T3IDSGs, and VDEQ-T3CSGs.

The presence of VOCs in soil gas is likely associated with the volatilization of VOCs from soil and groundwater. The VOCs may be associated with the past use of the SITE for bulk oil storage, fertilizer storage, coal storage, chemical mixing and manufacturing, and/or warehouse operations. The highest concentrations of VOCs in soil gas were detected near the SITE's property boundary with the ATGS's Oronoco Street outfall treatment system (southern property

boundary) The ATGS is located hydraulically upgradient of the SITE and has documented soil and groundwater impacts; thus, the ATGS may be a source and/or contributor to impacts noted at the SITE.

4.6 Sensitive Receptors and Risk Assessment

As part of the SCS, a Conceptual Site Model (CSM) was developed that identified potential receptors and potential pathways of exposure to these receptors under the current land use scenario (vacant property with limited access), future land use (commercial, retail, residential, or mixed use) scenario, and during construction. A graphic summary of the CSM is included as Figure 20. The CSM detailed the following:

- **Primary Release Mechanism**. Identification of the primary mechanisms by which the SITE became or continues to be impacted. The impacts appear to be the result of past site operations, with significant contribution from past operations at adjacent and nearby properties. No release mechanisms currently exist.
- **Source Media**. Identification of the affected media that continues to be a source of impacts. Source media at the SITE appears to be limited to impacted surface and subsurface soil.
- **Migration Pathway**. Identification of potential pathways by which impacted media can lead to potential exposure. Potential pathways identified included surface water runoff, biological uptake, leaching, and volatilization and diffusion.
- **Exposure Media**. Identification of media that provides a potential pathway of exposure. Potential exposure media identified include surface water and sediment, plants and animals, groundwater, and vapor.
- **Exposure Routes**. Identification of the routes by which exposure to impacted media may occur. Exposure routes identified include ingestion, dermal contact, and inhalation.
- **Potential Receptors**. Identification of potential receptors that could be exposed under current land use, future land use, and during construction.

Current Site Use Scenario

In the SITE's current use scenario, no potential pathways of exposure are believed to be complete. Potential receptors considered under this scenario included authorized site visitors and occasional workers and trespassers. The basis for this determination includes the following:

- All structures are currently vacant and access to the SITE is limited to authorized visitors and unauthorized access is restricted by fencing and locked building doors.

- Soil and groundwater impacts are limited and localized in extent and the vast majority of the SITE surface, including the areas where the highest degree of soil and groundwater impacts was identified, is covered by buildings (constructed on thick concrete slabs) or pavement limiting the potential for contact with impacted media. The surfaced areas also limit the potential for erosion, surface water runoff, formation of dusts, and VI.

- The potential for impacted groundwater to discharge into the nearby Potomac River exists; however, the concentrations of constituents detected in the wells located nearest to the shoreline contained COPCs at relatively low concentrations except for a few petroleum-related constituents and the metals lead and zinc. Lead and zinc have relatively low mobility and are not expected to migrate readily or extensively. The potential risks to surface water were further assessed through preparation of a RA.

- The SITE is not used for agricultural purposes and ICOR is not aware of any sensitive animal species living on or using the SITE for any purpose.

- Groundwater is not used at the SITE or in the City as a potable or irrigation water source.

- The buildings are currently vacant and not used for any purpose limiting the potential for inhalation of vapors should VI occur. All utilities supplying the SITE have been disconnected. In addition, the soil gas analytical data does not suggest VOCs are present at concentrations presenting a VI risk.

The aforementioned conditions are also expected to limit the risk to users of surrounding properties.

Future Site Use Scenario

In the SITE's future use scenario, several potential pathways of exposure exist; however, the potential for exposure will be minimized through corrective actions, incorporation of engineering controls, and implementation of institutional controls proposed in this CAP and future RAWP. Potential receptors considered under this scenario include residents, site workers, and site visitors. Pathways of exposure that could potentially become complete include ingestion of and dermal contact with surface soil, surface water runoff, and sediment generated during erosion and inhalation of vapors by utility workers or during work on subsurface utility lines. The corrective action, engineering controls, and institutional controls proposed in this CAP and future RAWP are also expected to limit the risk to users of surrounding properties.

Construction Worker

Several potential pathways of exposure exist or may become complete if construction work involving excavation and/or disturbance of impacted soil or impacted groundwater occurs; however, the potential for exposure will be minimized through corrective actions, implementation of engineering controls, and development of safety and health procedures for workers working in and around impacted areas proposed in this CAP and future RAWP. The only potential receptor considered under this scenario is a construction worker. Pathways of exposure that could potentially become complete include ingestion of surface and subsurface soil, surface water runoff, sediment generated during erosion, and groundwater and inhalation of vapors into open excavations during buildingconstruction. Pathways of exposure likely to be considered complete include dermal contact with surface and subsurface soil, surface water runoff, sediment generated during erosion, and groundwater.

Surrounding and Nearby Properties

Potential receptors at surrounding properties include residents at residential use properties, workers and visitors at surrounding commercial use properties, and visitors of Founders and Oronoco Bay Parks. It should be noted that the 501 Parcel is surrounded on all sides by roads or Potomac River. The 500 Parcel is surrounded by roads on its northern, eastern, and southern sides and commercial use property on its western side. The closest residential properties are located across the roads and commercial property to the northwest, west, and southwest. Adjacent property use is depicted on Figure 2.

The exposure risk to surrounding and nearby properties from SITE releases is anticipated to be minimal based on the following:

- Soil and groundwater impacts appear to be limited and localized in extent and the vast majority of the impacted media is covered by buildings (constructed on thick concrete slabs) or pavement limiting the potential for disturbance of and contact with the impacted media and potential for erosion, surface water runoff, and formation of dusts.

- The potential for impacted groundwater to discharge into the nearby Potomac River exists; however, the concentrations of constituents detected in the wells located nearest to the shoreline contained COPCs at relatively low concentrations with the exception of the metals lead and zinc. Lead and zinc have relatively low mobility and are not expected to migrate readily or extensively. The potential risks to surface water will be further assessed through proposed follow-up groundwater sampling and modelling.

- Based on groundwater measurement data obtained from SITE, groundwater flow is towards the east-northeast, away from surrounding properties of concern.

- Historical and recently collected data suggest that the properties bounding the SITE to the west and south are hydraulically upgradient of the SITE and the data does not indicate that they have been impacted by the SITE.

- Groundwater is not used in the City as a potable or irrigation water source.

ICOR believes that the corrective actions, engineering controls, and institutional controls proposed in this CAP and future RAWP under the future SITE land use scenario and that will be implemented during construction work will limit the risk to users of surrounding properties.

The proposed development of the 500 and 501 Parcels has not been finalized, but may include construction of mixed residential, retail, and commercial use multi-story structures. The new structures may be slab-on-grade or include one or more levels of subsurface parking and will be constructed on poured-concrete foundations. Newly constructed buildings are expected to overlie the majority of the parcels, with walkways, patios, and landscaping covering the remaining open spaces. Current plans for the parcels include raising the grade several feet across much of the parcels to allow for final elevations above the flood zone. Construction for building footers and potential subsurface parking levels is anticipated to require excavation and removal of several or more feet of soil from the parcels. There is a possibility that a large sewer

overflow structure may be constructed on the northern portion of the 501 Parcel that will involve significant excavation of that portion of the SITE; however, the final location of such structure has not been finalized and could also be located outside the limits of the SITE.

Impacted soil and groundwater and soil gas at the SITE may present a risk to site construction workers during site development, and future site maintenance workers in areas where deep excavation is conducted (via direct contact and inhalation of vapors). The aforementioned risks will be minimized through development and implementation of a Site-Specific Health and Safety Plan (H&SP) and oversight and monitoring by a qualified environmental professional (QEP).

Risks identified during development of the CSM were addressed in a RAR recently prepared by ICOR and submitted to the VRP and PSTP in November 2018. The RA was conducted according to the methodology presented in the VRP Risk Assessment Guidance and quantified potential human health risks posed by constituents released into the environment. The basic steps included identification of the constituents present in the environmental media, assessment of population exposure and exposure pathways, assessment of the constituent's toxicity to the exposed populations, and a summary of human health risks. A Conceptual Site Model developed as part of the SCS was used to identify potential receptors and potential exposure pathways under current land use (vacant property with limited access) and future land use scenarios (commercial, retail, residential, or mixed use), and during construction, and to complete the RA.

Based on the findings of the RA, without the implementation of engineering controls and institutional controls there is risk from impacted soil to all four future receptor types selected: site commercial worker, site visitor (Trespasser), construction worker, and resident. The risk to these receptors is largely dictated by the presence of arsenic in soil. If arsenic-impacted soil were to be removed then the risks would be expected to be within acceptable ranges for potential receptors. Naphthalene in groundwater does pose a hazard to the construction worker working in a trench should the worker incidentally drink groundwater; however, this scenario is unlikely and can be minimized through development of worker health and safety procedures and protocols. Likewise, were institutional or engineering controls maintained on the SITE to prevent receptor interaction with impacted soil and groundwater then there would be minimal risk to future receptors. It should be noted that removal and capping of impacted soil, incorporation and use of engineering controls, and establishment of institutional controls in conjunction with and after future development is proposed in this CAP.

5.0 PROPOSED CORRECTIVE ACTIONS, ENGINEERING CONTROLS, AND INSTITUTIONAL CONTROLS

Certain corrective actions as a part of construction will address environmental concerns associated with impacted soil and groundwater including removal and proper disposal of impacted soil unearthed during construction and proper management and treatment of groundwater encountered or dewatered during construction. Corrective actions associated with remnant tanks should they be encountered include the removal and proper disposal of tanks. Newly constructed buildings and associated impervious surfaces such as walkways, patios, and

paved common areas, and placement of "clean" soil below landscaped areas will provide engineering controls that limit the potential for contact to impacted media.Additionally, common and parking areas will be overlain with pavement and landscaped areas will be underlain by a minimum of 2 feet of "clean" soil. The proposed engineering controls will limit the potential for contact to impacted media and VI into site structures and features. Institutional controls proposed for the SITE include restrictive covenants (deed restrictions) limiting site use to commercial land use (only if a parcel is developed as commercial); restricting the use of groundwater for any purposes other than environmental monitoring; and referencing health and safety and soil and groundwater management protocols during future excavation. A detailed discussion of the proposed corrective actions, engineering controls, and institutional controls is provided in the following sections.

5.1 Soil Management

Cut and fill operations will be documented and monitored by a QEP to ensure the health and safety of workers, document conditions, and make recommendations as to the beneficial reuse of disturbed soil. Careful management of soil during development is warranted based on the presence of elevated concentrations of arsenic and petroleum constituents, especially on the 500 Parcel. Notable areas of arsenic and petroleum impact to soil are depicted on Figures 10 through 15. Detailed information concerning the depths of the impacted soil was noted and the type and concentrations of constituents of concern are summarized on Tables 1 and 4A through 4E. Further delineation of impacts within areas proposed for construction will be considered before the start of construction. The presence of impacted soil and Commonwealth of Virginia criteria for beneficial reuse of soil warrants special handling and off-site disposal/treatment of impacted soil disturbed during construction. Impacted soil may also be removed to reduce a source of groundwater impacts, decrease the potential for VI, and reduce risks to future SITE users.

To address impacted soil identified within the limits and depth of construction (and disturbed during development), the impacted soil will be removed and transported off site for proper disposal/treatment. The impacted soil will be removed by a qualified contractor under the direct supervision of a QEP. Over-excavation of 2 feet or more of impacted soil will also be considered for areas where higher degrees of impact were noted and areas that will be overlain by landscaping (to limit the potential for contacting impacted soil in the future). During excavation of the remainder of the SITE, the removed soil will be inspected and field screened to verify that the soil is "clean" and can be beneficially reused on or off site. Periodic analytical testing may also be performed, especially in areas impacted by metals (which are not easily detected by inspection and field screening). The inspection will include a visual inspection to look for evidence of impact such as staining and olfactory inspection to note chemical and/or petroleum odors. Field screening will include checking the soil for volatile organic vapors (VOVs) with a photo-ionization detector (PID).

Samples of soil deemed to be "clean" may be periodically collected for laboratory analysis. At minimum, the samples will be submitted to a qualified laboratory for analysis of TPH-GRO, TPH-DRO, Target Compound List (TCL) VOCs, PAHs, and Priority Pollutant List (PPL) metals. Analysis will be performed by a Commonwealth of Virginia-certified laboratory using United States Environmental Protection Agency (EPA) analytical methods.

Arsenic and petroleum-impacted soil leaving the SITE will be manifested and transported to a disposal or treatment facility permitted to accept the soil. Samples of the soil leaving the SITE will also be collected in advance of excavation for laboratory analysis and at frequencies required by the accepting facility. The impacted soil will be transported by licensed waste haulers. Soil determined to be "clean" will be beneficially reused on site or transported off site for beneficial reuse.

The successful removal of impacted soil will be confirmed and the quality of soil left in place at the limits of excavation will be assessed through the collection of soil samples for laboratory analysis. Soil samples will be collected from the excavation bottoms and sidewalls. At minimum, soil samples will be collected along the excavation walls at 50 foot intervals (spacing between sample points). Soil samples will be collected along the excavation bottom at 2,500 square foot intervals (one sample per 50 foot by 50 foot area). The sidewall samples will be collected from the depth corresponding to soil exhibiting the highest degree of impact based on field observations or a depth corresponding to the approximate middle of the sidewall if no evidence of impact is noted.

The post-excavation soil samples will be submitted to a qualified laboratory for analysis of some or all of the following TPH-GRO, TPH-DRO, TCL VOCs, PAHs, and PPL metals. Analysis will be performed by a Commonwealth of Virginia-certified laboratory using EPA analytical methods.

In lieu of post-excavation sampling, pre-excavation sampling may be completed using the 50 foot grid on 2,500 square foot intervals for the same parameters as provided for the post-excavation sampling.

The soil management activities will be supervised and documented by a QEP.

5.2 UST Removal

This section provides the proposed corrective actions should an UST be encountered during development. If a tank is encountered, it will be emptied and removed under the supervision of a QEP. Upon discovery, the VDEQ will be promptly notified and required permits will be obtained from the City on an emergency basis. Upon receipt of the permit, the UST(s) will be excavated and removed by a qualified contractor. If a tank is found to contain fluids, the fluids will be characterized, then removed using a vacuum truck. Associated tank system piping will also be emptied of fluids using a vacuum truck. The fluids will be removed as soon as possible to prevent a potential release of the fluids. Recovered fluids will be manifested and transported to a permitted facility for disposal or treatment.

Tanks found to contain vapors at elevated levels (levels deemed unsafe to remove the tank from the excavation or cut it open for cleaning) will be vented using dry ice or other approved methods. After proper venting, the tank will be removed from the tank excavation, cut open, cleaned, and recycled or disposed. Venting, cutting, and cleaning of the tanks will be conducted by qualified contractors. Cutting and cleaning will be conducted on site, on plastic sheeting.

Waste fluids and sludge generated during cleaning will be recovered using a vacuum truck. Recovered fluids will be manifested and transported to a permitted facility for treatment or disposal.

If the tank is found to contain inert material (e.g., sand, concrete, ash, etc.), the inert material will be removed by cutting open the tank (after proper venting). The removed material will be inspected for evidence of impact by visual inspection and field screening. Field screening for VOVs will be conducted using a PID. Material determined to be "clean" will be disposed off site as normal construction debris or reused on site as fill. Inert material that is determined to be impacted will be manifested and transported to a disposal or treatment facility permitted to accept the material.

The need to collect soil samples for laboratory analysis beneath and adjacent to the removed UST(s) will be determined through discussions with the VDEQ and will be based on the depth of excavation proposed in the tank area(s) during construction.

The tank removal activities will be supervised and documented by a QEP.

5.3 Groundwater Management

Deep excavation during construction may encounter groundwater; thus, some form of groundwater dewatering may be required. If only a small volume of water is anticipated, the water will be transferred from the excavation to a temporary holding tank and periodically transported off site for treatment. The water will be transported to a treatment facility permitted to accept the water and will be transported to the facility by licensed waste haulers. All water leaving the SITE will be manifested.

If more extensive dewatering is required and large volumes of water requiring treatment are anticipated, the water will be treated on site and discharged to a Commonwealth of Virginia and City-approved storm or sanitary sewer or directly to a surface water pursuit to an applicable general or individual Virginia Pollutant Discharge Elimination Permit. Permits should be obtained from the VDEQ, City, and federal government if required before the start of dewatering, treatment, and discharge. During treatment, the total volume and quality of water recovered and treated be tracked and monitored. Treatment of groundwater will be performed using a mobile treatment system capable of treating groundwater to meet Commonwealth of Virginia, VDEQ, City, and federal requirements for discharge. Treatment may involve the use of an oil/water separator, air-stripper, granular activated carbon, or a combination of these technologies.

The quality of water treated and discharged will be monitored as required by the Commonwealth of Virginia, VDEQ, City, and federal government. At minimum, monitoring will include the collection of influent and effluent samples for laboratory analysis. Samples should be submitted to a qualified laboratory for analysis required by the Commonwealth of Virginia, VDEQ, City, and federal government. Anticipated analysis includes TPH-GRO, TPH-DRO, TCL VOCs, PAHs, and PPL metals.

If any of the buildings will be constructed below the soil/groundwater interface (water table) and will include a foundation dewatering system, a long-term groundwater management plan will be developed. Long-term management will likely include a water treatment system to treat groundwater generated by the building's dewatering system before discharge. Long-term groundwater management is considered an engineering control.

The groundwater management activities will be designed, supervised, documented, and conducted by qualified contractors and QEPs.

5.4 Engineering Controls

Newly constructed buildings are expected to overlie the majority of the SITE, with walkways, patios, paved common areas, and landscaping covering the remaining open spaces. Landscaped areas will be underlain by a minimum of 2 feet of "clean" soil. These engineering controls will limit the potential for contact to impacted media.

5.5 Institutional Controls

The following institutional controls will be imposed on the SITE through restrictive covenants recorded with the "Certification of Satisfactory Completion of Remediation" issued under the VRP to close the potential exposure pathways:

1. No groundwater wells will be installed on the SITE other than for purposes of environmental monitoring and groundwater beneath the SITE shall not be used for any purposes other than for environmental testing and collection for de-watering in compliance with law;

2. As areas of the SITE are redeveloped, the SITE will be covered by parking garages, buildings, asphalt, concrete or similar surfaces, or at least 2 feet of clean fill with the cover maintained in perpetuity, except for short term periodic installation or maintenance of utilities or subsurface structures;

3. Any subsurface work or excavation on the SITE shall be completed in accordance with a Site-Specific Health and Safety Plan (H&SP), which shall be developed by a QEP and in accordance with applicable federal, state, and local regulations. The plan will also address protocols for managing and handling impacted soil disturbed during excavation. (Note: Health and safety protocols proposed to address concerns associated with excavation include a requirement that a QEP be included in all planning of excavation that may encounter impacted soil; monitoring and documentation of excavation be conducted by a QEP; personal protective equipment be used by construction workers if warranted; and engineering controls be implemented if warranted (e.g., venting of excavation). Additionally, disturbed soil not meeting VDEQ beneficial reuse requirements will be properly disposed.)

The institutional controls will be developed by ANT's council.

6.0 REPORTING

Key reports that will be prepared as part of the corrective action efforts include a RAWP, H&SP, and *Post-Remedial Action Report* (PRAR).

Remedial Action Work Plan
After a definitive development plan is established for the SITE, a RAWP will be prepared and submitted to the VRP. The RAWP will provide more specific details concerning corrective actions, engineering controls, and institutional controls proposed for implementation in this CAP in conjunction with and post development. A copy of the RAWP will also be submitted to the PSTP. The corrective actions, engineering controls, and institutional controls will be tailored to each parcel's proposed use.

Site-Specific Health and Safety Plan
Prior to the start of site development and implementation of the corrective actions, a Construction Worker H&SP will be prepared by a QEP in accordance with applicable federal, state, and local regulations. The plan will address health and safety risks posed by the presence of impacted soil and groundwater and required protections for construction workers and general public. A copy of the plan will be kept on the active construction site at all times and the plan will be required reading for all site workers.

At the conclusion of site development, the Construction Worker H&SP will be modified by a QEP if necessary to address future concerns for site maintenance and construction workers. A copy of the plan will be kept in each parcel's maintenance office at all times and the plan will be required reading for all maintenance and construction workers.

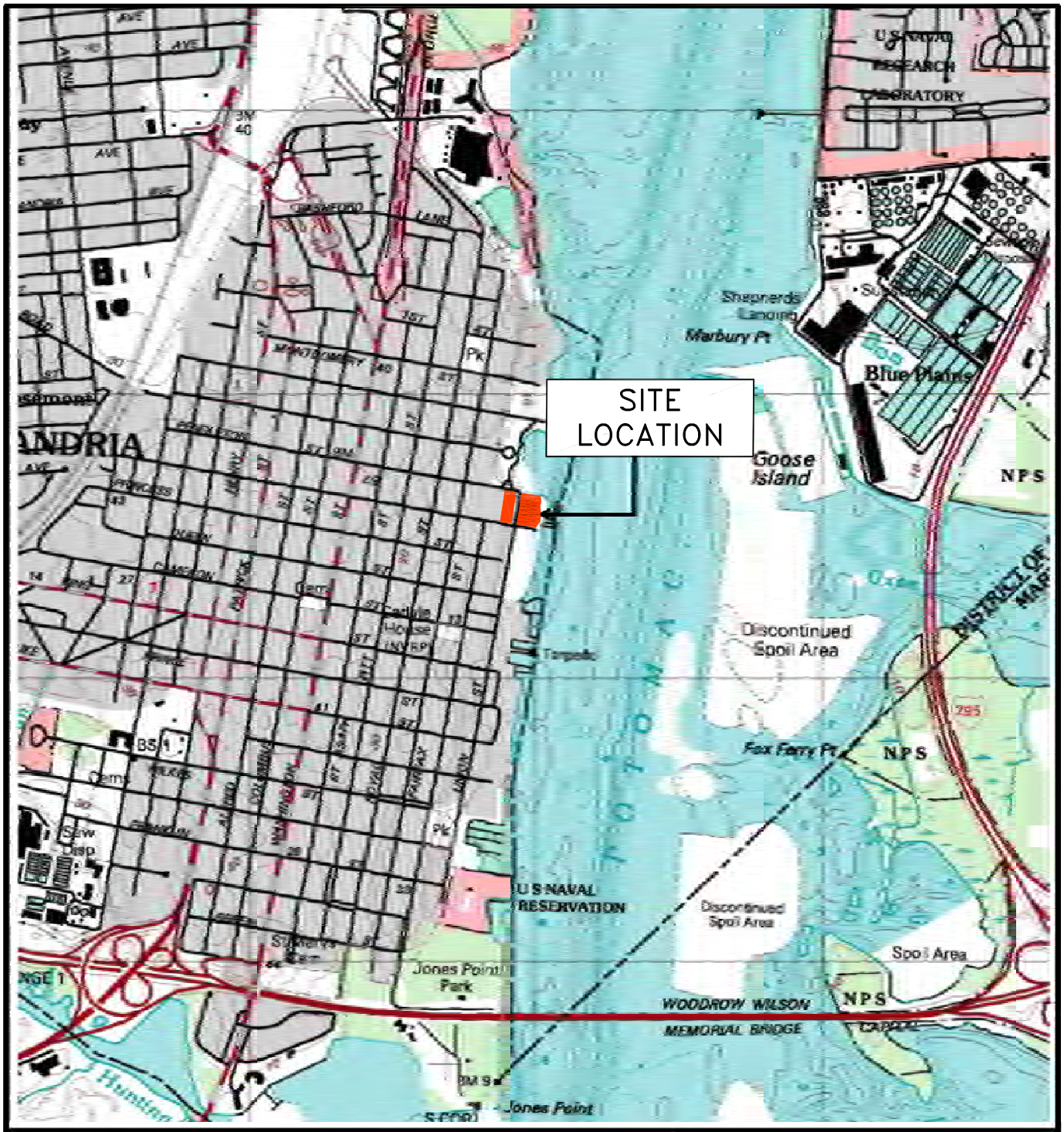
Post-Remedial Action Report
Upon successful completion of the proposed corrective actions, a PRAR will be prepared and submittal to the VRP and PSTP. The PRAR will be prepared by a QEP and will be prepared in accordance with applicable VRP and PSTP guidelines. The PRAR is also expected to satisfy PSTP requirements for a *Corrective Action Completion Report*. The report will provide a detailed summary of the corrective actions implemented to address environmental concerns and engineering controls implemented and institutional controls established to address post-development concerns. The report will include analytical summary tables; maps depicting areas where impacted soil and tanks were encountered and removed, locations where samples were collected, and analytical sampling results; soil and tank disposal manifests; and laboratory reports of analysis. The report will also include detailed drawings depicting the vapor barrier and venting system design and summary of the institutional controls in the form of restrictive covenants (deed restrictions) recorded for each parcel.

The PCAR will also formerly request issuance of a Case Closure Letter from the PSTP and "Certification of Satisfactory Completion of Remediation" from the VRP for each parcel comprising the SITE.

7.0 PROJECT SCHEDULE

CAP implementation is anticipated to begin after obtaining discretionary approvals for redevelopment and will conclude upon successful development of each parcel comprising the SITE. The VRP and PSTP will be notified periodically on the status of the development schedule and the RAWP will be submitted for review and approval at least 60 days in advance of the start of development.

FIGURES



REFERENCE:
7.5 MINUTE SERIES TOPOGRAPHIC QUADRANGLE
ALEXANDRIA, VIRGINIA
PHOTOREVISED 1994 SCALE 1:24,000

N

0 1000 2000 4000
SCALE, FEET

SITE LOCATION

DESIGNED BRUZZESI	DATE 04/04/17
DRAWN CONNELLY	DATE 04/04/17

ICOR LTD.
PO BOX 406
MIDDLEBURG, VIRGINIA 20118

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

PROJECT NO. 16.CI.001	SCALE: AS SHOWN
DRAWING NO.	FIGURE 1

16-CI-001-RTN SCR01-SITE LOC.DWG – July 6, 2016

MICROSOFT CORPORATION 2016

0 125 250 500

SCALE IN FEET

AERIAL PHOTOGRAPH

DESIGNED BRUZZESI	DATE 04/04/17
DRAWN CONNELLY	DATE 04/04/17

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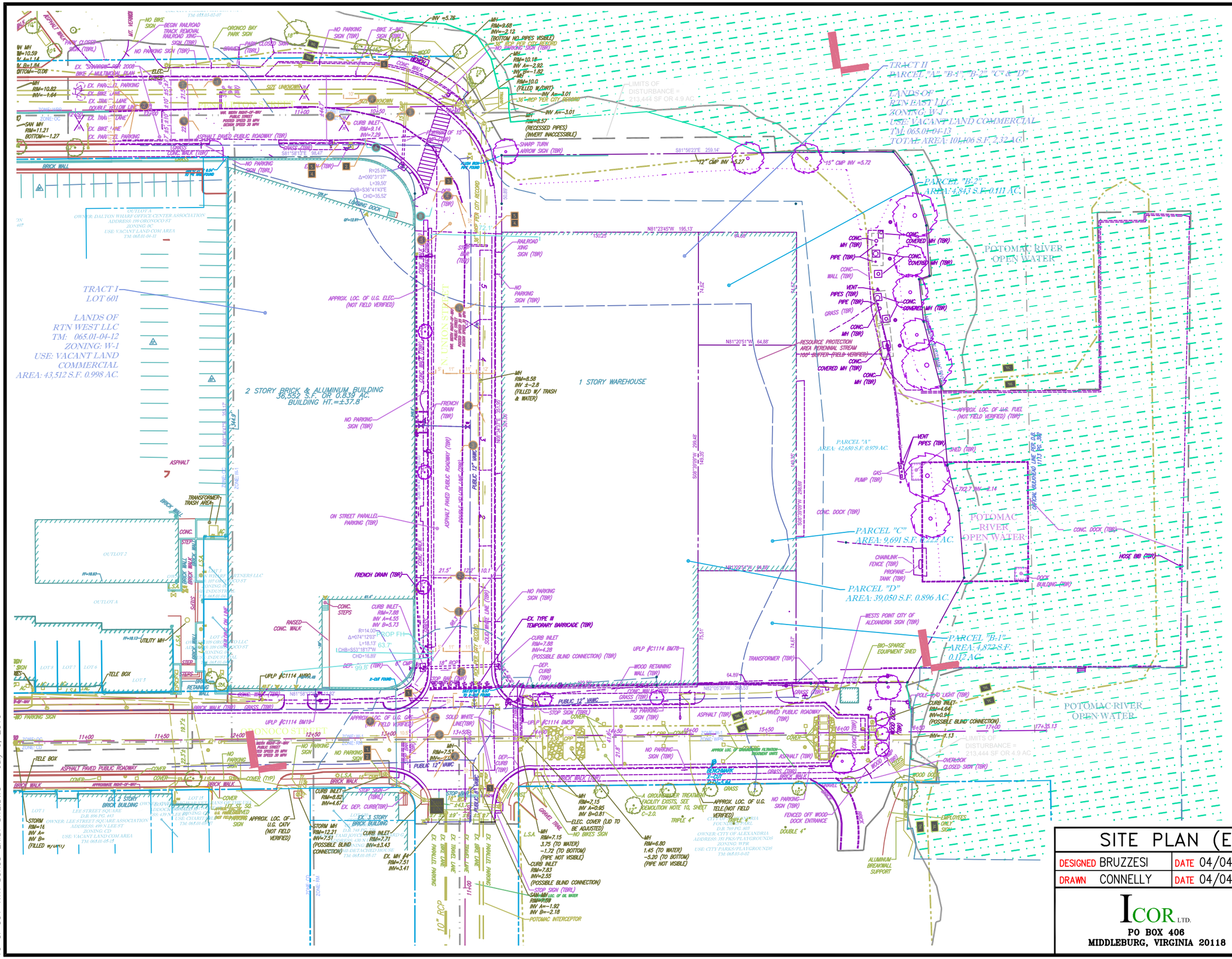
FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

PROJECT NO. 16.CI.001	SCALE: AS SHOWN
DRAWING NO.	FIGURE 2

16-CI-001-RTN SCR02-AERIAL.DWG — July 6, 2016



SITE PLAN (EXISTING CONDITIONS)

DESIGNED	BRUZZESI	DATE	04/04/17
DRAWN	CONNELLY	DATE	04/04/17

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

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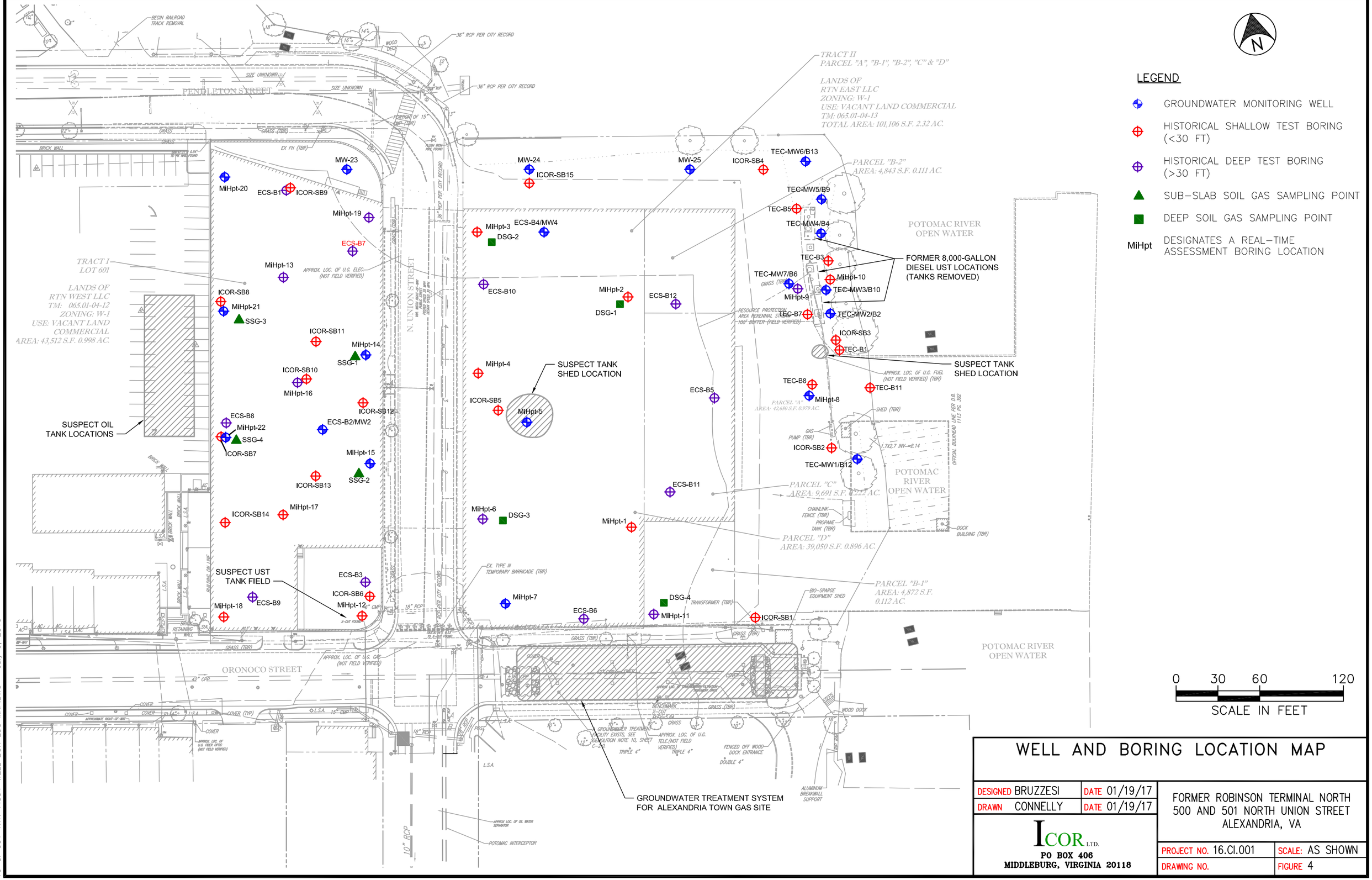
PO BOX 406
MIDDLEBURG, VIRGINIA 20118

PROJECT NO. 16.CI.001	SCALE: AS SHOWN
DRAWING NO.	FIGURE 3

16-CI-001-RTN SCR03-EXIST SITE.DWG — July 6, 2016



WELL AND BORING LOCATION MAP

DESIGNED	BRUZZESI	DATE	01/19/17
DRAWN	CONNELLY	DATE	01/19/17

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MIDDLEBURG, VIRGINIA 20118

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

PROJECT NO. 16.CI.001	SCALE: AS SHOWN
DRAWING NO.	FIGURE 4

16-CI-001-RTN-FIG04-WELL BOR LOC MAP.DWG — July 6, 2016

N

LEGEND

- GROUNDWATER MONITORING WELL
- HISTORICAL SHALLOW TEST BORING (<30 FT)
- HISTORICAL DEEP TEST BORING (>30 FT)
- SUB-SLAB SOIL GAS SAMPLING POINT
- DEEP SOIL GAS SAMPLING POINT
- MiHpt — DESIGNATES A REAL-TIME ASSESSMENT BORING LOCATION

0 25 50 100

SCALE IN FEET

GEOLOGIC CROSS-SECTION LOCATIONS

DESIGNED BRUZZESI	DATE 04/04/17
DRAWN CONNELLY	DATE 04/04/17

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FORMER ROBINSON TERMINAL NORTH
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ALEXANDRIA, VA

PROJECT NO. 16.CI.001	SCALE: AS SHOWN
DRAWING NO.	FIGURE 5

16-CI-001-RTN SCR05-XSECT LOCS.DWG - July 6, 2016

A

A'

MiHpt-22

ECS-B2/MW2

MiHpt-15

MiHpt-5

ECS-B5

MiHpt-8

TEC-B11

EXIST BLDG

N UNION ST

EXIST BLDG

EXIST GRADE

SAND

CLAY

SILT

FILL

SAND

GRAVEL

SILT

CLAY

20

0

-40

-60

-80

ELEVATION (FEET)

LEGEND

FILL

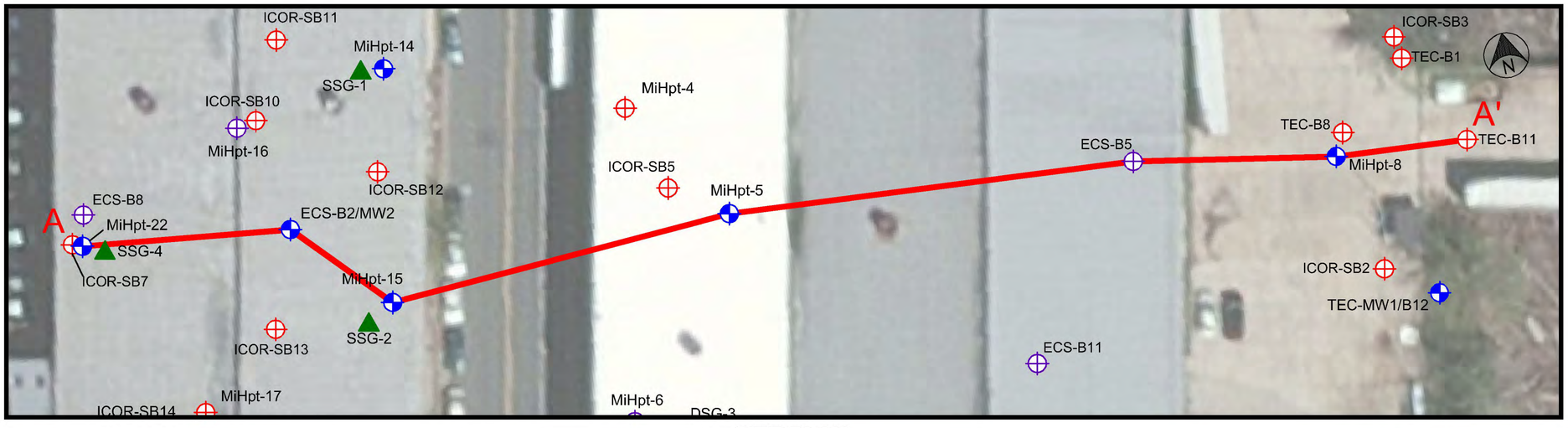
SAND

CLAY

GRAVEL

SILT

GROUNDWATER ELEVATION



SITE PLAN

VERT SCALE IN FEET

0 10 20

HORIZ SCALE IN FEET

15 30 60

DRAFT

GEOLOGIC CROSS-SECTION A-A'

DESIGNED	ZOECKLER	DATE	04/04/17
DRAWN	CONNELLY	DATE	04/04/17

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

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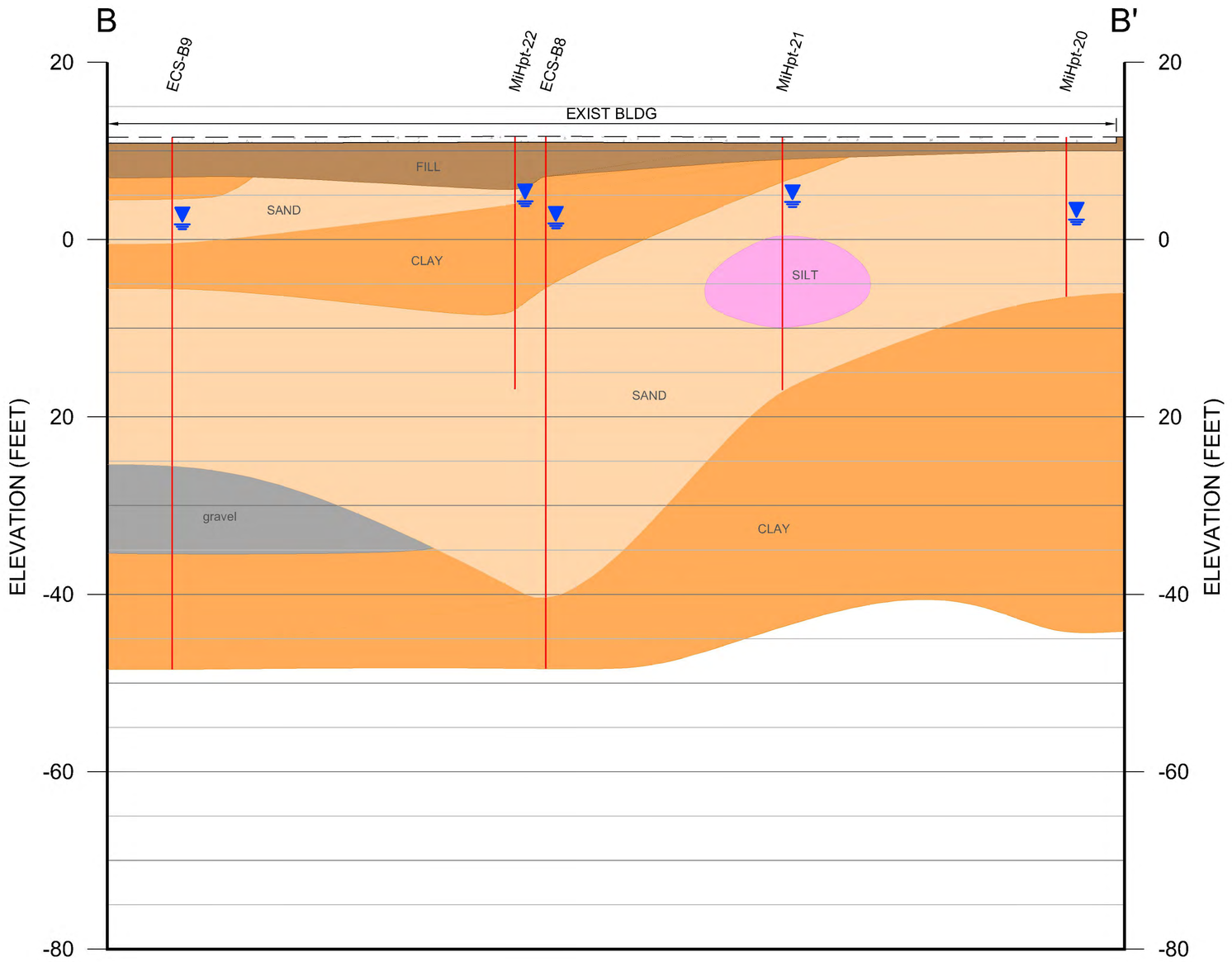
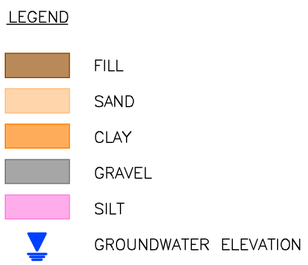
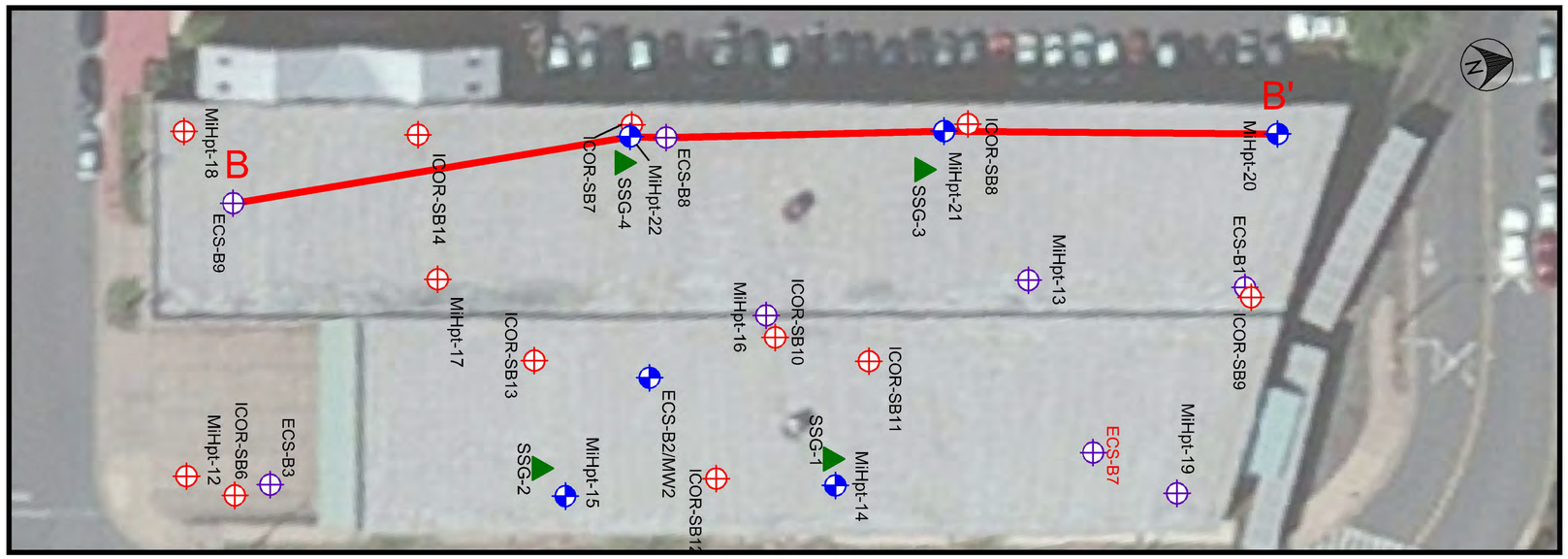
MIDDLEBURG, VIRGINIA 20118

PROJECT NO.	16.CI.001	SCALE:	AS SHOWN
DRAWING NO.		FIGURE	6

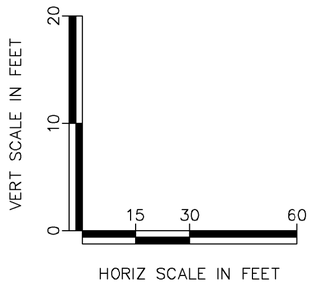
Filename: 16-CI-001-RTN SCR06-08-XSECTS.DWG







SITE PLAN



DRAFT

GEOLOGIC CROSS-SECTION B-B'

DESIGNED ZOECKLER	DATE 04/04/17	FORMER ROBINSON TERMINAL NORTH 500 AND 501 NORTH UNION STREET ALEXANDRIA, VA	
DRAWN CONNELLY	DATE 04/04/17		
ICOR LTD. PO BOX 406 MIDDLEBURG, VIRGINIA 20118		PROJECT NO. 16.CI.001	SCALE: AS SHOWN
		DRAWING NO.	FIGURE 7

Filename: 16-CI-001-RTN SCR06-08-XSECTS.DWG

C

C'

ECS-B6

ECS-B11

ECS-B5

ECS-B12

ECS-BW/MW4

EXIST BLDG

CLAY

FILL

CLAY

SAND

CLAY

ELEVATION (FEET)

20

0

20

-40

-60

-80

LEGEND

FILL

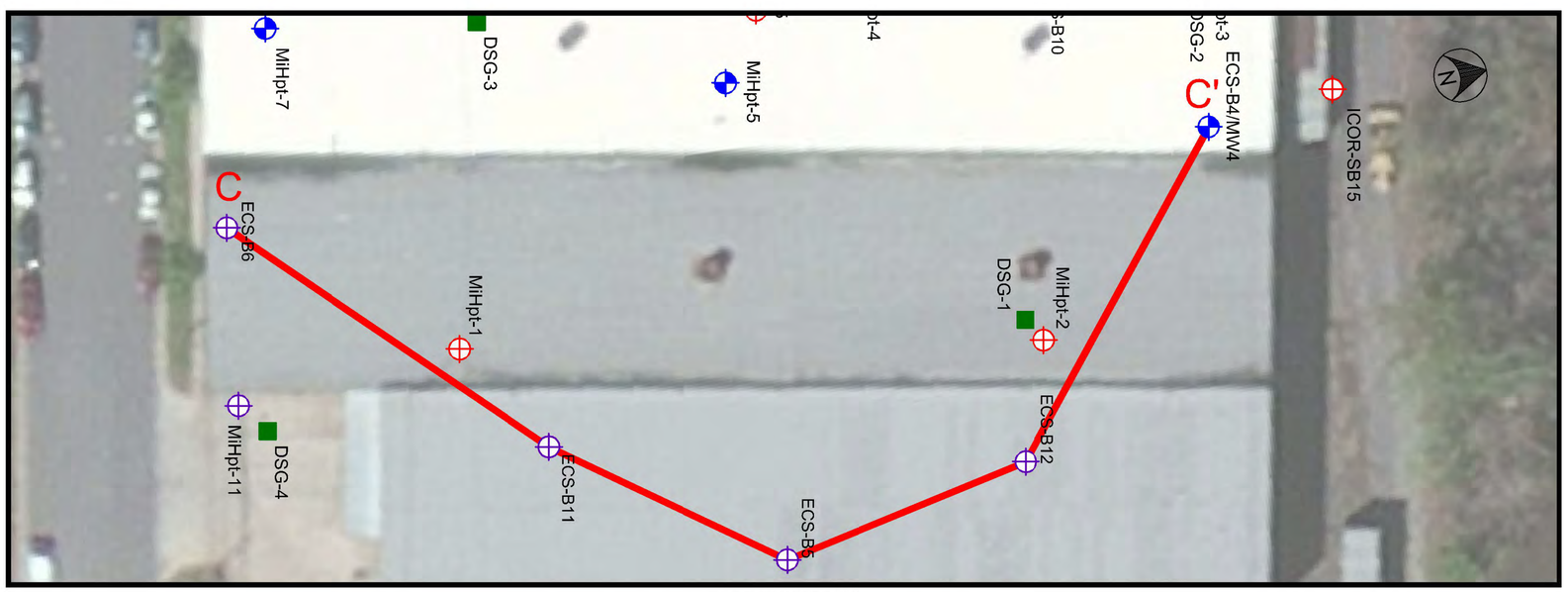
SAND

CLAY

GRAVEL

SILT

GROUNDWATER ELEVATION



SITE PLAN

VERT SCALE IN FEET

0 10 20

15 30 60

HORIZ SCALE IN FEET

DRAFT

GEOLOGIC CROSS-SECTION C-C'

DESIGNED ZOECKLER	DATE 04/04/17	FORMER ROBINSON TERMINAL NORTH 500 AND 501 NORTH UNION STREET ALEXANDRIA, VA
DRAWN CONNELLY	DATE 04/04/17	
ICOR LTD. PO BOX 406 MIDDLEBURG, VIRGINIA 20118		PROJECT NO. 16.CI.001 SCALE: AS SHOWN
		DRAWING NO. FIGURE 8

Filename: 16-CI-001-RTN SCR06-08-XSECTS.DWG

N

Legend

- Site Property
- Groundwater Contour (6/2018)
- Groundwater Flow Direction
- Groundwater Monitoring Well

Notes:
DRY - Well was dry.

0 25 50 100
Feet

GROUNDWATER CONTOUR MAP (6/7/18)

DESIGNED BRUZZESI	DATE 7/31/18
DRAWN CONNELLY	DATE 7/31/18

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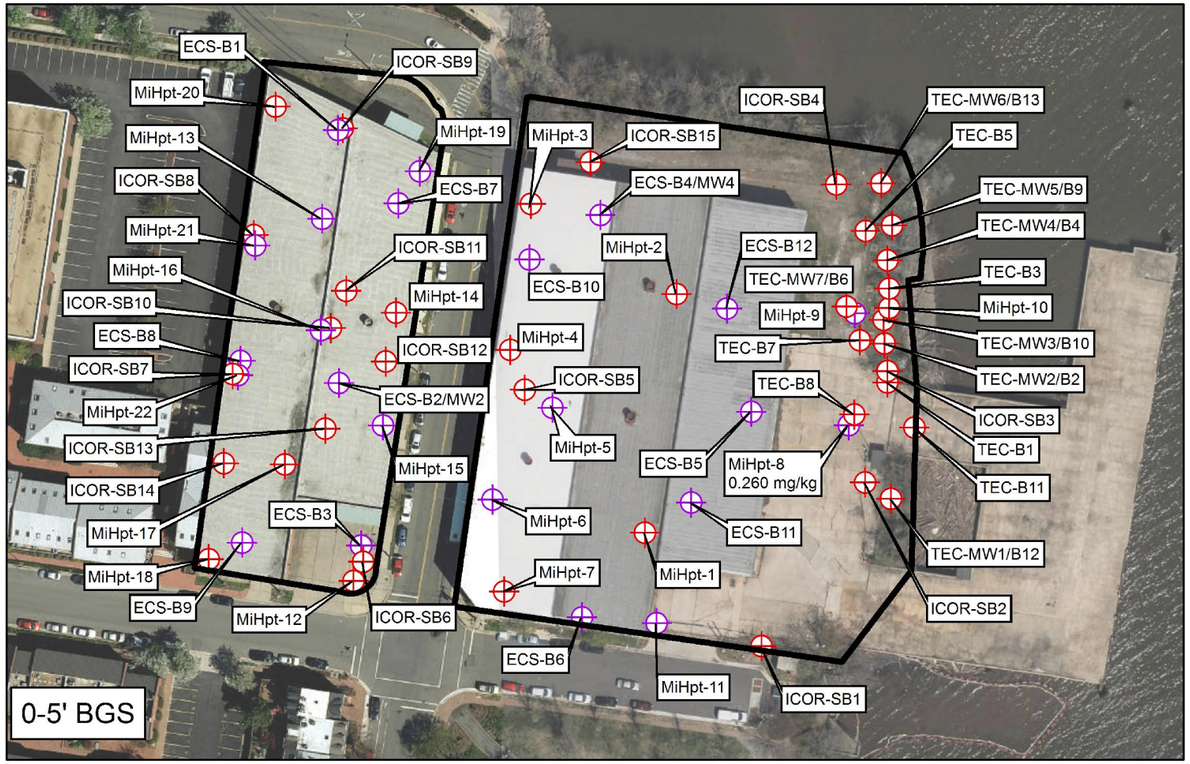
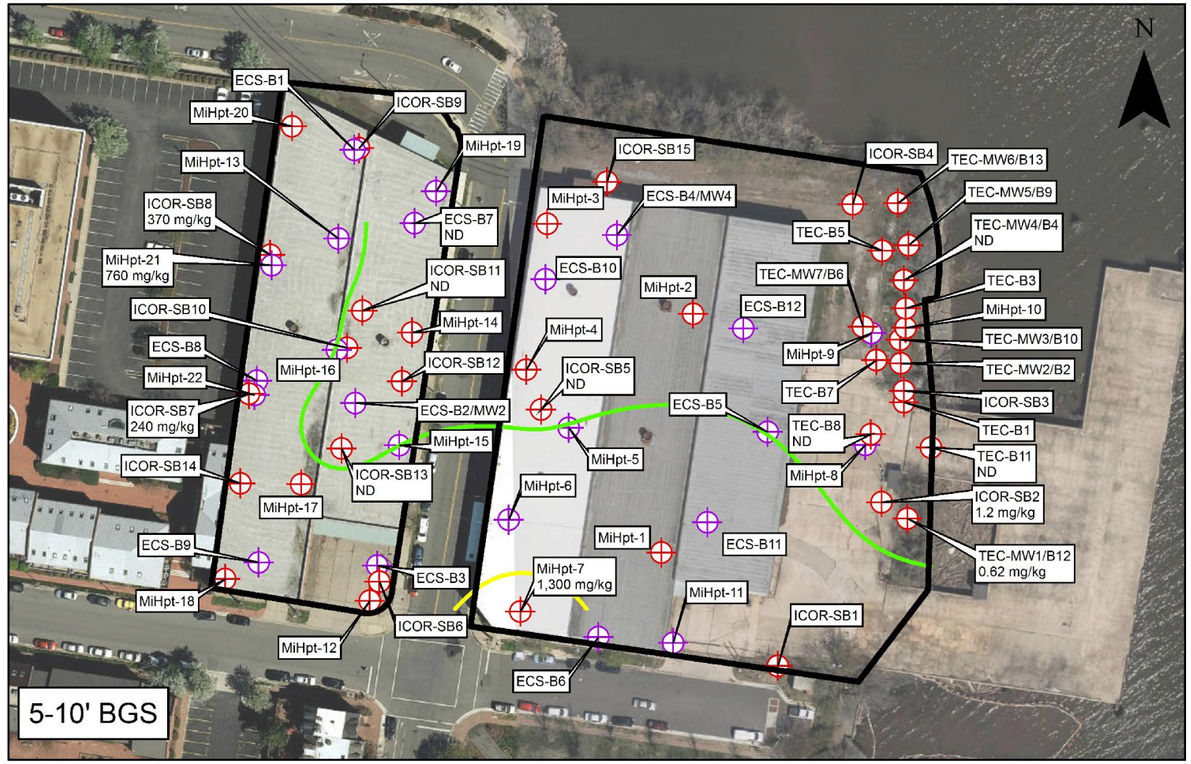
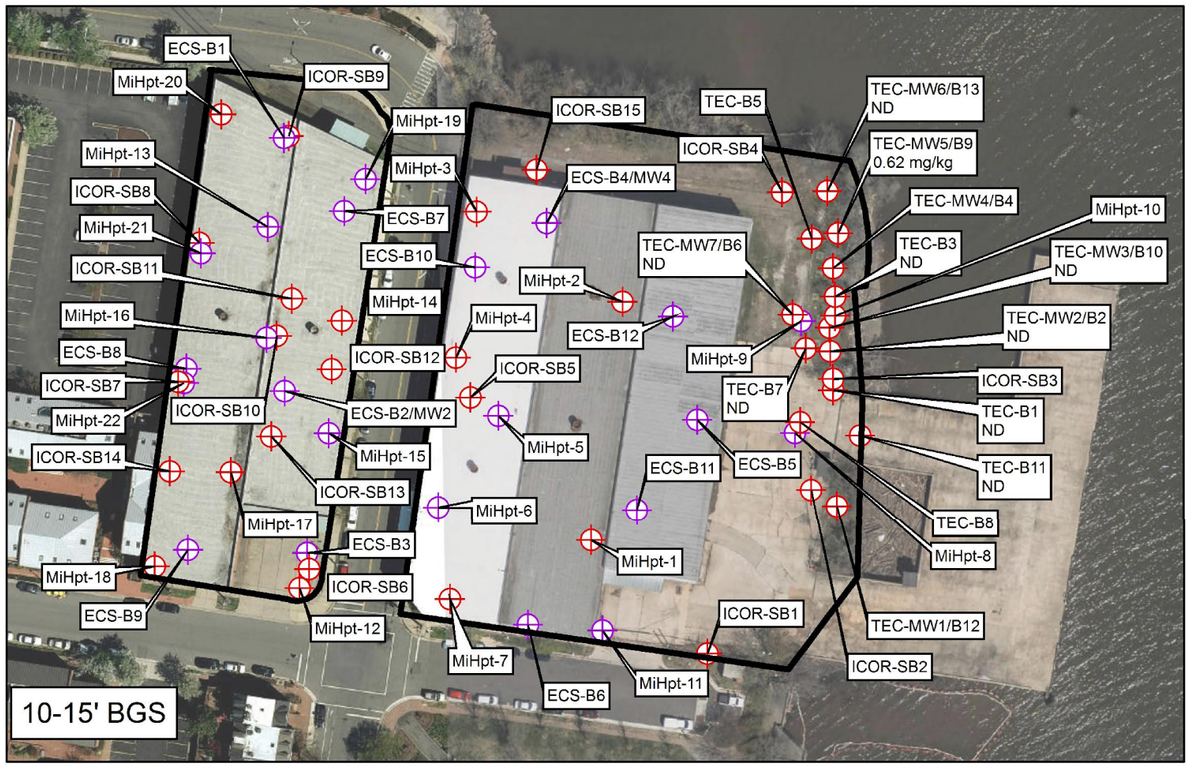
FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

PROJECT NO. 16.CI.001	SCALE: AS SHOWN
DRAWING NO.	FIGURE 9

16-CI-001-RTN-180607-SCR09-GW CONT MAP.DWG — July 6, 2016







Legend

- Site Property
- Historical Shallow Test Boring
- Historical Deep Test Boring

Isoconcentrations (TPH-GRO)

- 1,000 mg/kg
- 100 mg/kg

Sample ID
TPH-GRO Concentration (mg/kg)

	VDEQ-PSSS
TPH-GRO	8,300 mg/kg

0 50 100 200 Feet

Notes:
ND - Non-Detect
VDEQ-PSS - Commonwealth of Virginia Department of Environmental Quality (VDEQ) petroleum saturated soil standard

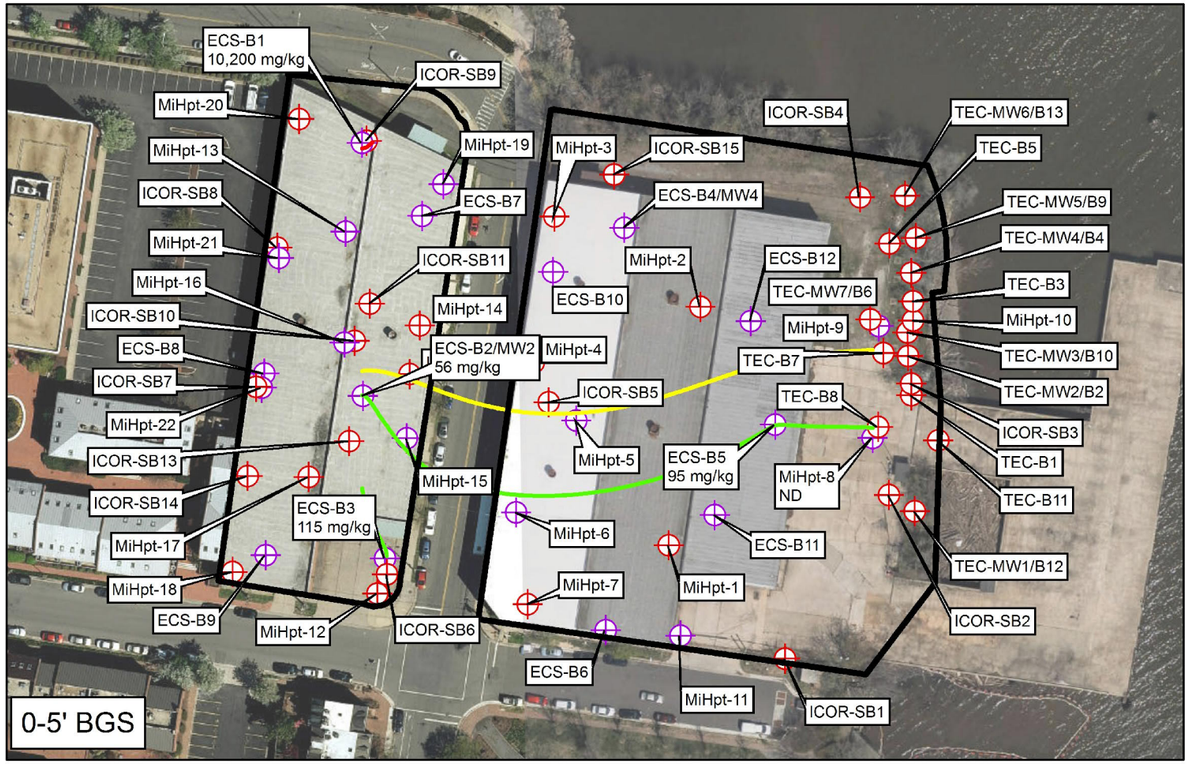
HISTORIC TPH-GRO IN SOIL ISOCONCENTRATION MAP

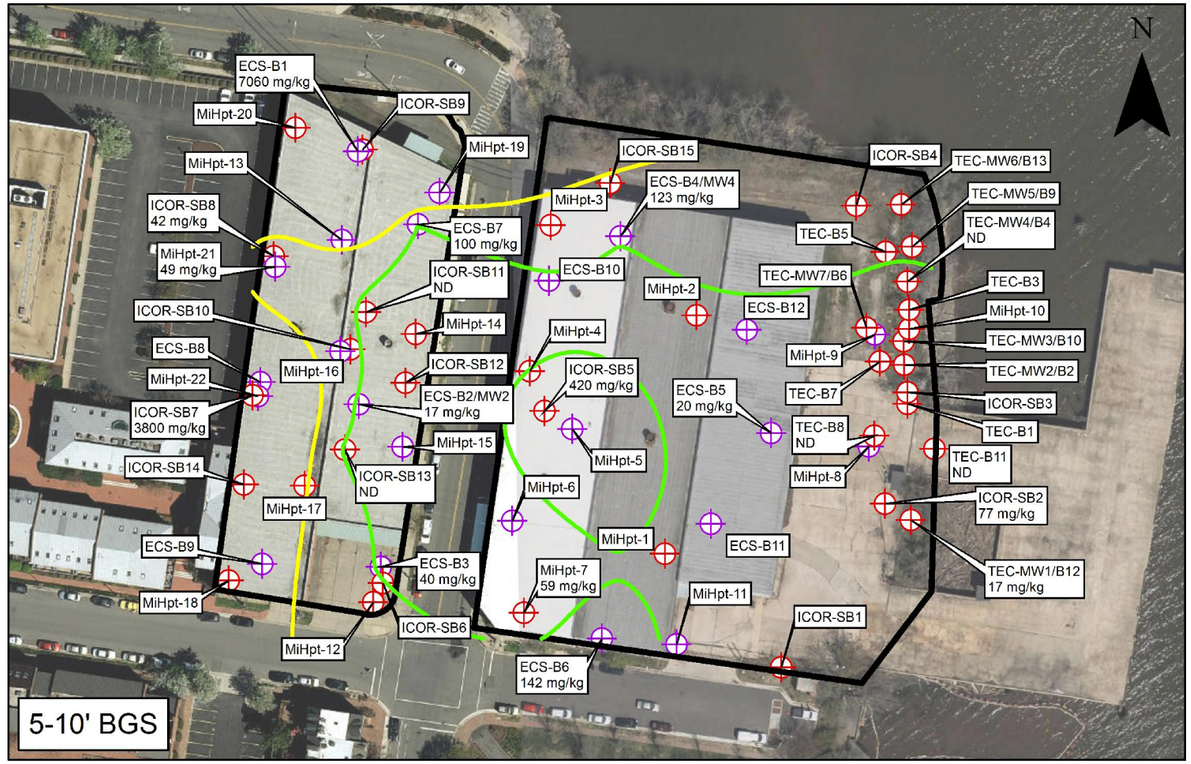
DESIGNED BRUZZESI	DATE 04/04/17
DRAWN CONNELLY	DATE 04/04/17

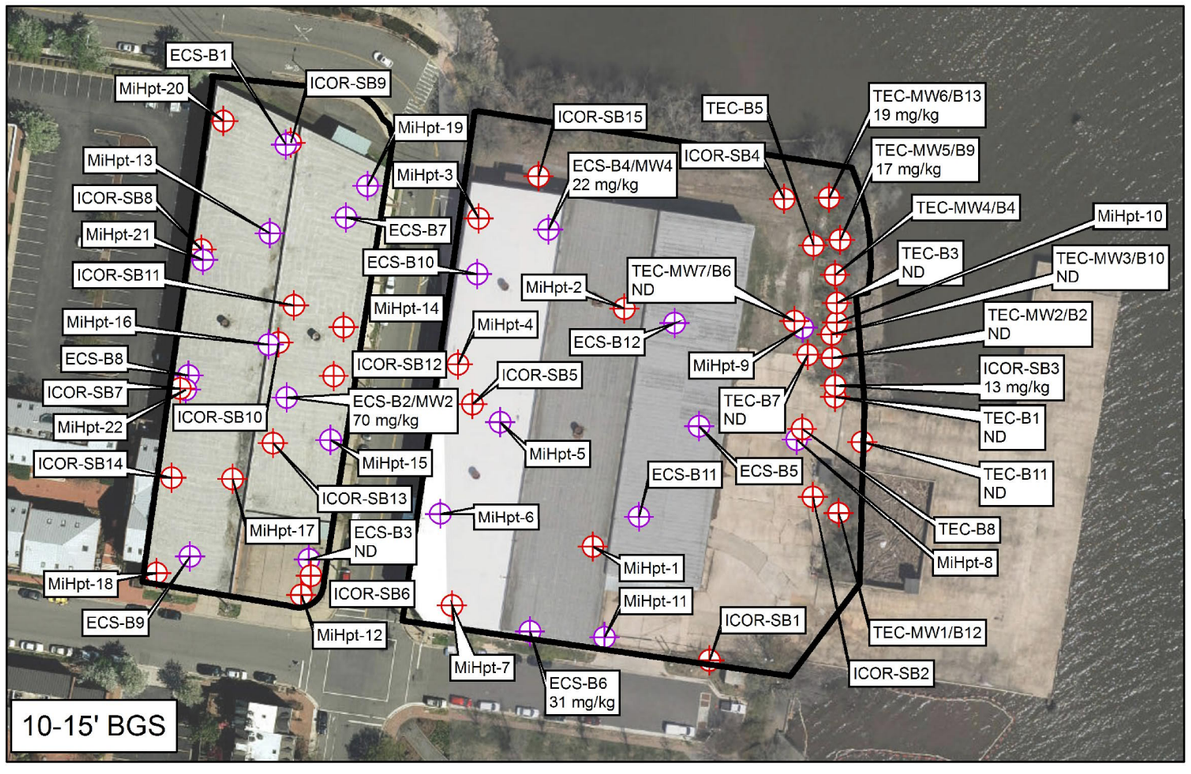
ICOR LTD.
PO BOX 406
MIDDLEBURG, VIRGINIA 20118

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

PROJECT NO. 16.CI.001	SCALE: AS SHOWN
DRAWING NO.	FIGURE 10







Legend

- Site Property
- Historical Shallow Test Boring
- Historical Deep Test Boring

Isoconcentration (TPH-DRO)

- 10,000 mg/kg
- 1,000 mg/kg
- 100 mg/kg

Sample ID
TPH-DRO Concentration (mg/kg)

	VDEQ-PSSS
TPH-DRO	11,000 mg/kg

0 50 100 200 Feet

Notes:
ND - Non-Detect
VDEQ-PSS - Commonwealth of Virginia Department of Environmental Quality (VDEQ) petroleum saturated soil standard

HISTORIC TPH-DRO IN SOIL ISOCONCENTRATION MAP

DESIGNED BRUZZESI	DATE 04/04/17
DRAWN CONNELLY	DATE 04/04/17

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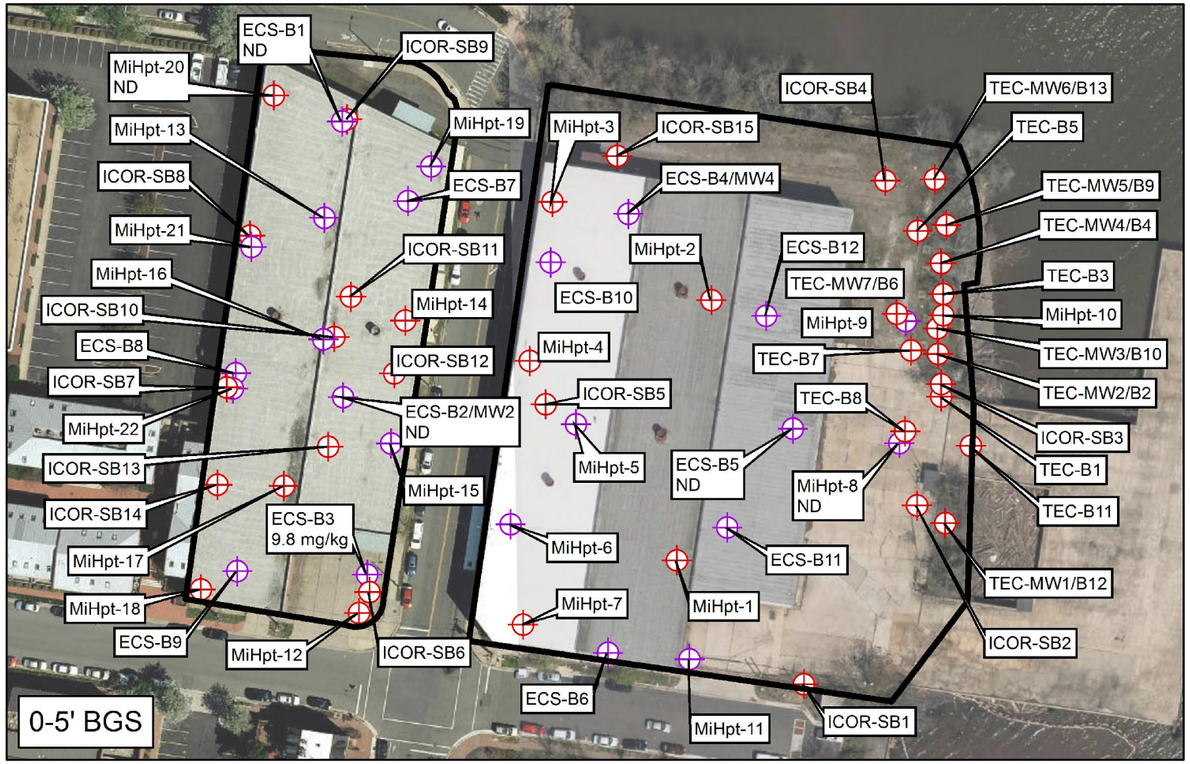
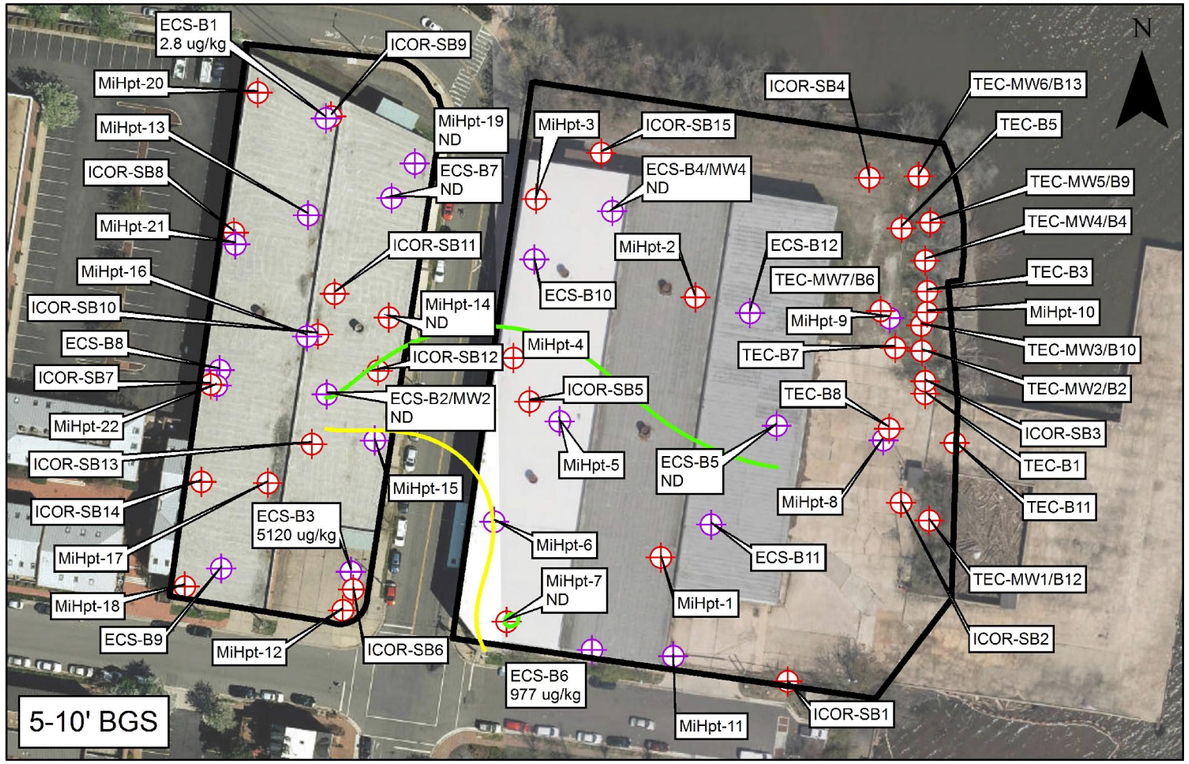
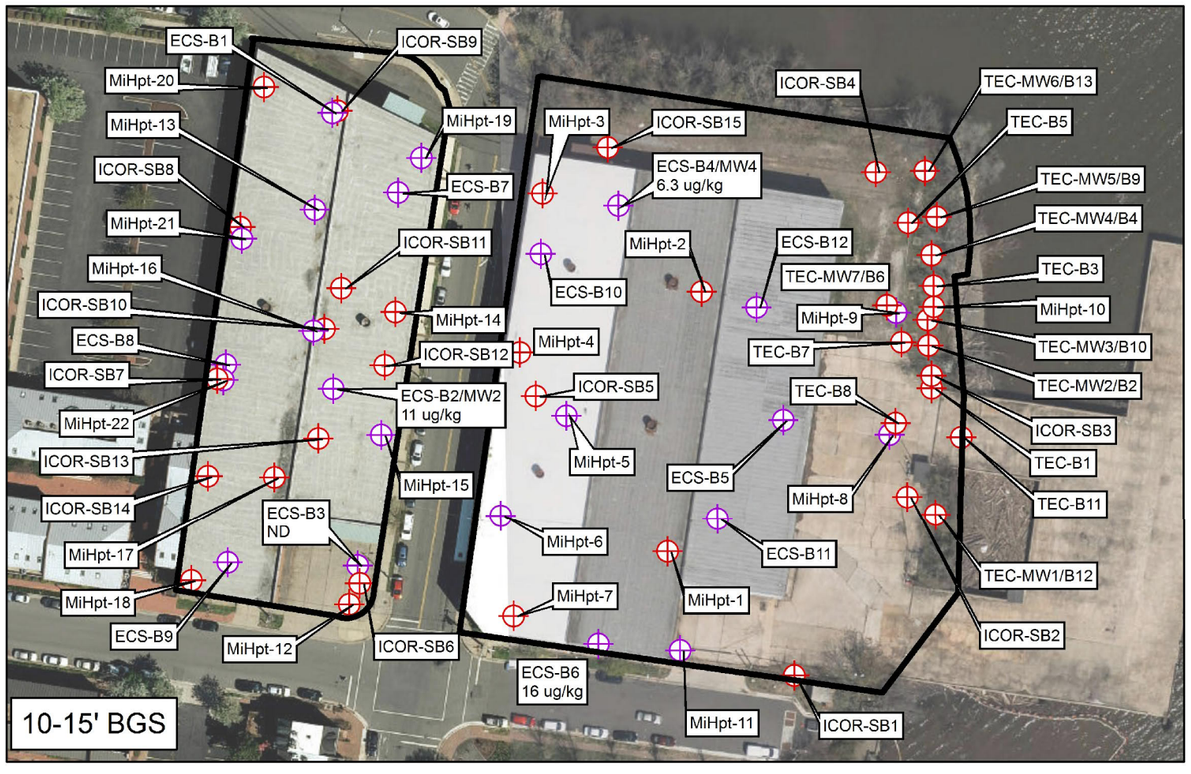
MIDDLEBURG, VIRGINIA 20118

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

PROJECT NO. 16.CI.001	SCALE: AS SHOWN
DRAWING NO.	FIGURE 11







Legend

- Site Property
- Historical Shallow Test Boring
- Historical Deep Test Boring

Isoconcentrations (Benzene)

- 977 ug/kg
- 97.7 ug/kg

Sample ID
Benzene Concentration (ug/kg)

	VDEQ-T2SCU	VDEQ-T3SCR
Benzene	97.7 ug/kg	5,400 ug/kg

0 50 100 200 Feet

Notes:
ND - Non-Detect
VDEQ-T2SCU - VDEQ Tier II screening concentration for unrestricted use soil (residential)
VDEQ-T3SCR - VDEQ Tier III screening concentration for restricted use soil (commercial/industrial)

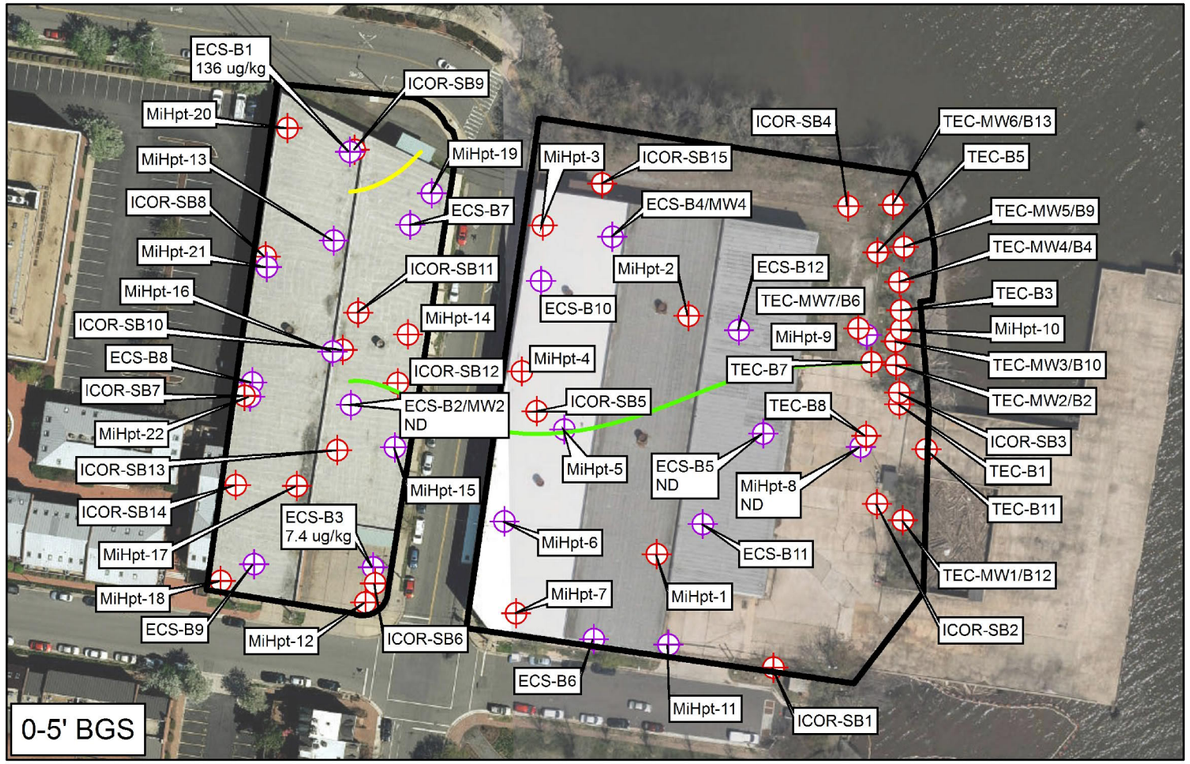
HISTORIC BENZENE IN SOIL ISOCONCENTRATION MAP

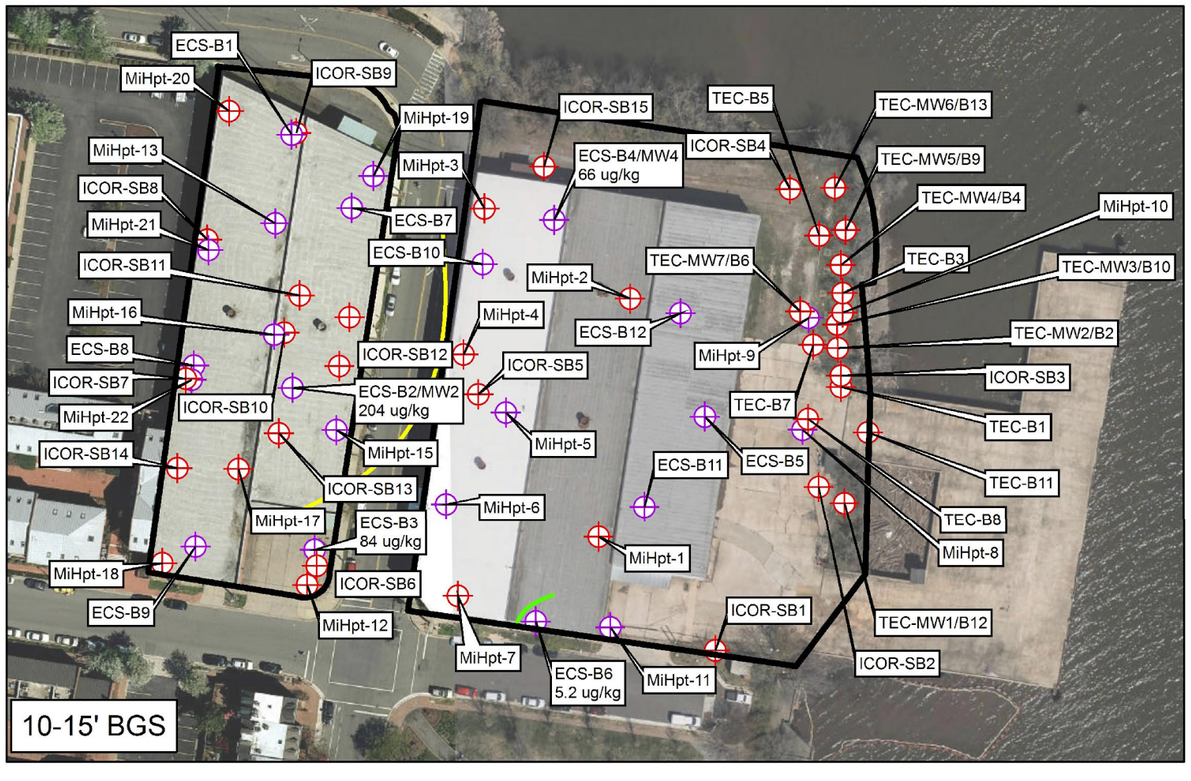
DESIGNED	BRUZZESI	DATE	04/04/17
DRAWN	CONNELLY	DATE	04/04/17

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

ICOR LTD.
PO BOX 406
MIDDLEBURG, VIRGINIA 20118

PROJECT NO. 16.CI.001	SCALE: AS SHOWN
DRAWING NO.	FIGURE 12





Legend

- Site Property
- Historical Shallow Test Boring
- Historical Deep Test Boring

Isoconcentration (Napthalene)

- 114 ug/kg
- 11.4 ug/kg

Sample ID
Naphthalene Concentration (ug/kg)

	VDEQ-T2SCU	VDEQ-T3SCR
Naphthalene	26.2 ug/kg	18,000 ug/kg

0 50 100 200 Feet

Notes:
ND - Non-Detect
VDEQ-T2SCU - VDEQ Tier II screening concentration for unrestricted use soil (residential)
VDEQ-T3SCR - VDEQ Tier III screening concentration for restricted use

HISTORIC NAPHTHALENE IN SOIL ISOCONCENTRATION MAP

DESIGNED BRUZZESI	DATE 04/04/17
DRAWN CONNELLY	DATE 04/04/17

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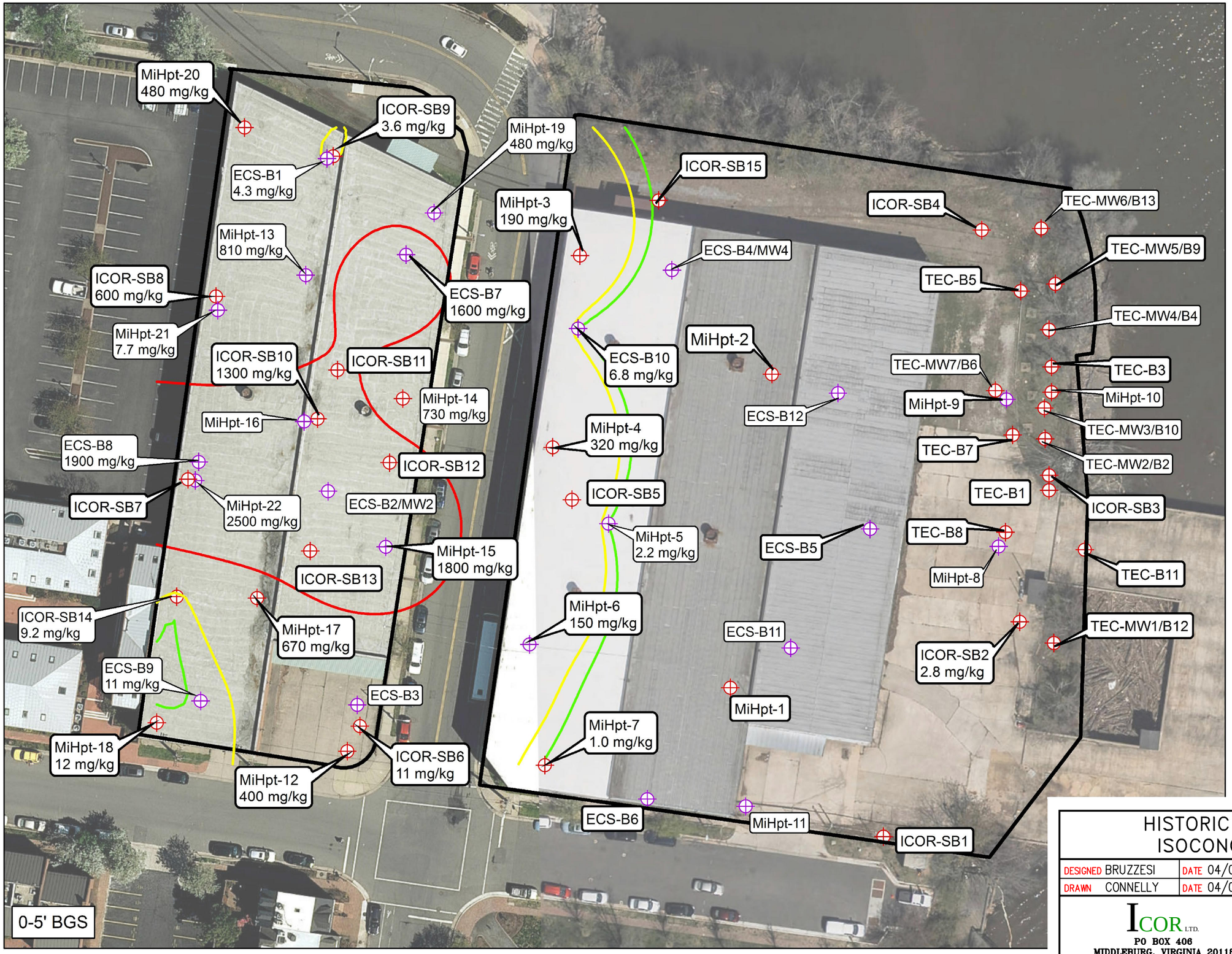
FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

PROJECT NO. 16.CI.001	SCALE: AS SHOWN
DRAWING NO.	FIGURE 13



N

Legend

- Site Property
- Historical Shallow Test Boring
- Historical Deep Test Boring

Isoconcentration (Arsenic)

- 1000 mg/kg
- 30 mg/kg
- 3.4 mg/kg

Sample ID
Arsenic Concentration (mg/kg)

	VDEQ-T2SCU	VDEQ-T3SCR
Arsenic	3.4 ug/kg	30 ug/kg

Notes:
VDEQ-T2SCU - VDEQ Tier II screening concentration for unrestricted use soil (residential)
VDEQ-T3SCR - VDEQ Tier III screening concentration for restricted use soil (commercial/industrial)

0 25 50 100 Feet

HISTORIC ARSENIC IN SOIL ISOCONCENTRATION MAP

DESIGNED BRUZZESI DATE 04/04/17
DRAWN CONNELLY DATE 04/04/17

ICOR LTD.
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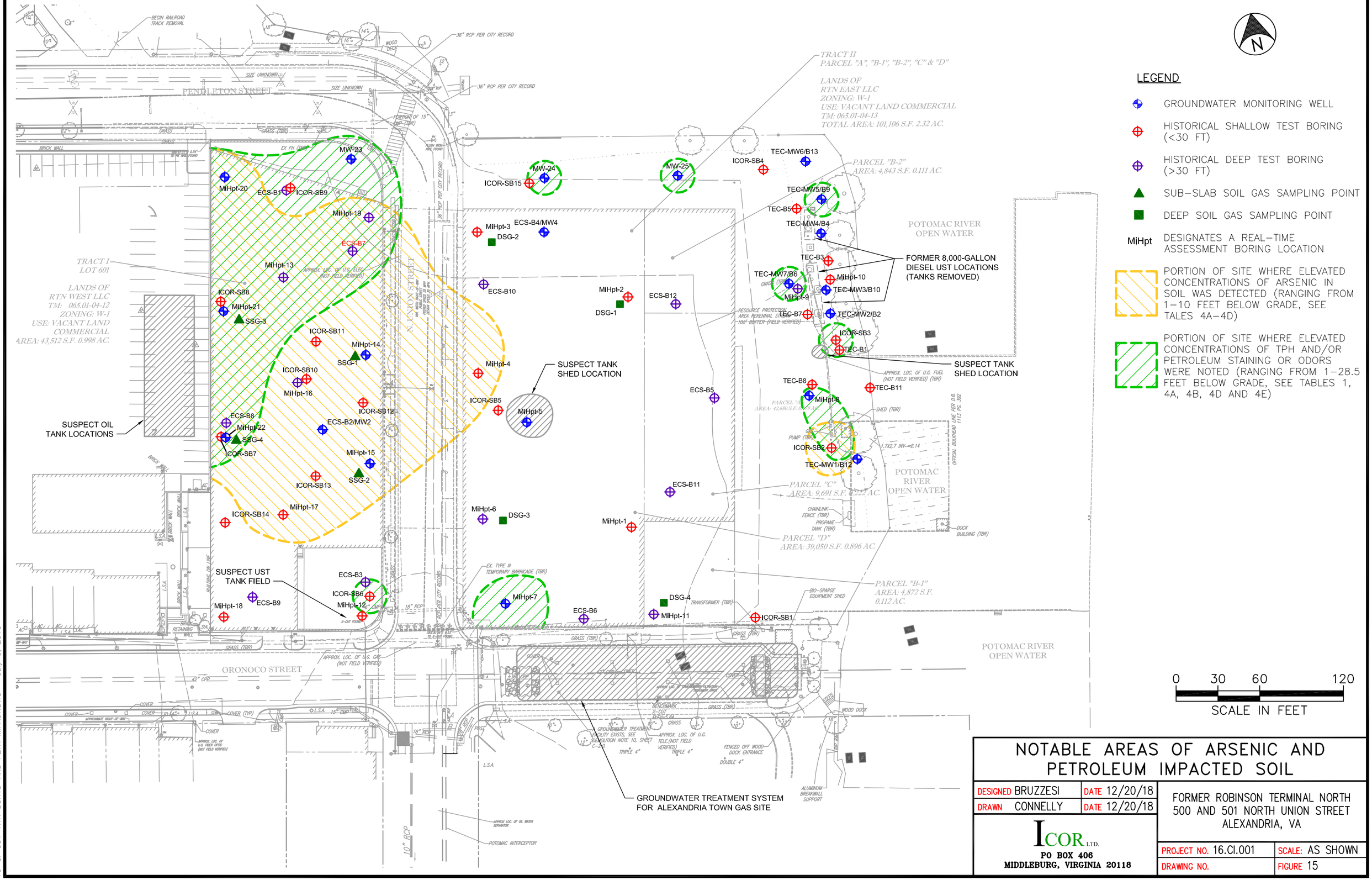
FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

PROJECT NO. 16.CI.001 SCALE: AS SHOWN
DRAWING NO. FIGURE 14

16-CI-001-RTN SCR14-HIST ARS SOIL.DWG — July 6, 2016



LEGEND

- GROUNDWATER MONITORING WELL
- HISTORICAL SHALLOW TEST BORING (<30 FT)
- HISTORICAL DEEP TEST BORING (>30 FT)
- SUB-SLAB SOIL GAS SAMPLING POINT
- DEEP SOIL GAS SAMPLING POINT
- MiHpt — DESIGNATES A REAL-TIME ASSESSMENT BORING LOCATION
- PORTION OF SITE WHERE ELEVATED CONCENTRATIONS OF ARSENIC IN SOIL WAS DETECTED (RANGING FROM 1-10 FEET BELOW GRADE, SEE TALES 4A-4D)
- PORTION OF SITE WHERE ELEVATED CONCENTRATIONS OF TPH AND/OR PETROLEUM STAINING OR ODORS WERE NOTED (RANGING FROM 1-28.5 FEET BELOW GRADE, SEE TABLES 1, 4A, 4B, 4D AND 4E)

NOTABLE AREAS OF ARSENIC AND PETROLEUM IMPACTED SOIL

DESIGNED	BRUZZESI	DATE	12/20/18
DRAWN	CONNELLY	DATE	12/20/18

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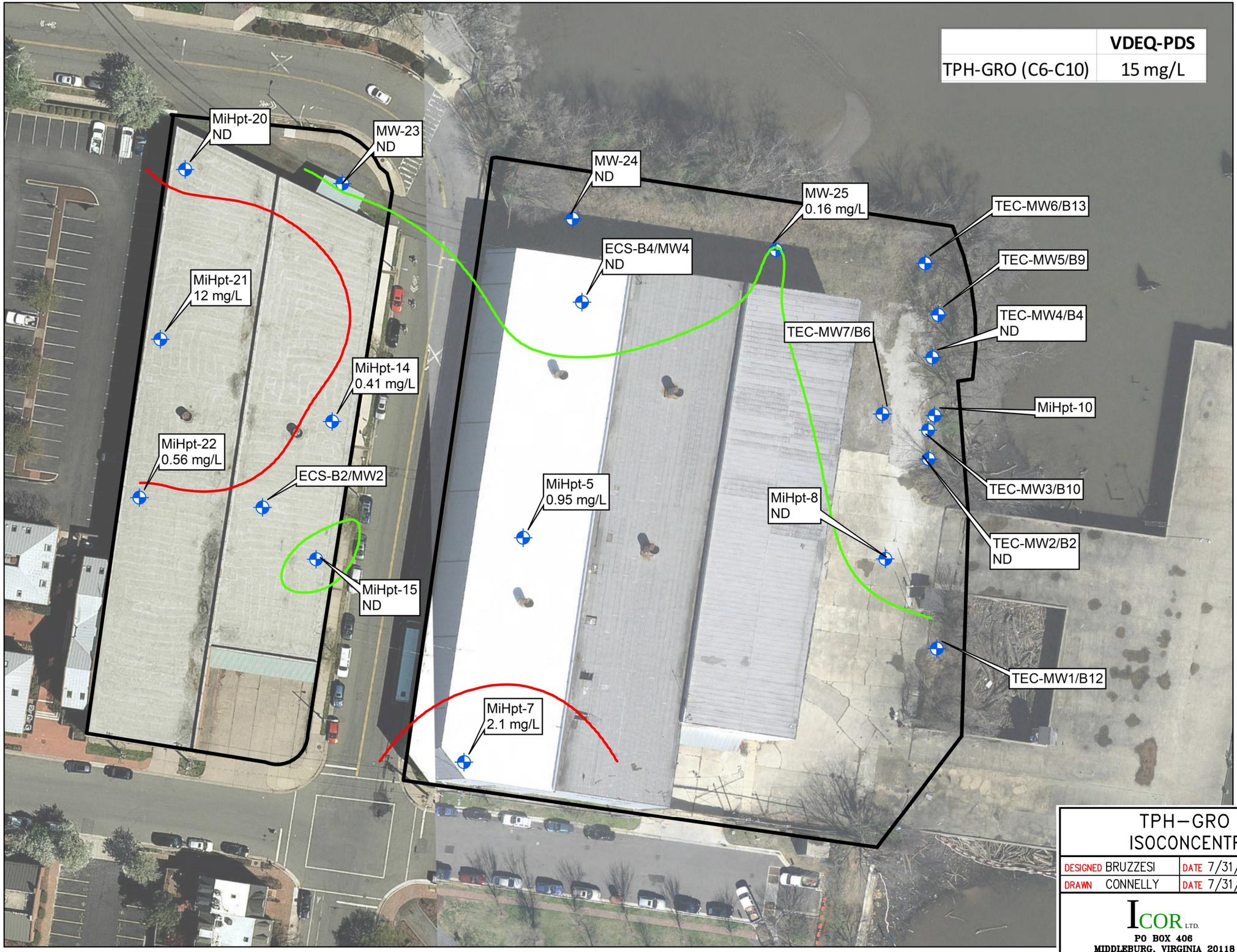
FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

PROJECT NO. 16.CI.001	SCALE: AS SHOWN
DRAWING NO.	FIGURE 15

16-CI-001-RTN SCR15-ARS PETR IMPACT.DWG — July 6, 2016



N

Legend

- Site Property
- Groundwater Monitoring Well

Isoconcentration (TPH-GRO)

- 0.15 mg/L
- 1.5 mg/L

Sample ID
TPH-GRO Concentration (mg/L)

Notes:
ND - Non-Detect
VDEQ-PDS = general permit discharge standard for petroleum contaminated water

0 25 50 100 Feet

TPH–GRO IN GROUNDWATER ISOCONCENTRATION MAP (6/7/18)

DESIGNED BRUZZESI	DATE 7/31/18
DRAWN CONNELLY	DATE 7/31/18

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FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

PROJECT NO. 16.CI.001	SCALE: AS SHOWN
DRAWING NO.	FIGURE 16

16-CI-001-RTN-180607-SCR16-TPH GRO GW.DWG — July 6, 2016

	VDEQ-PDS
TPH-DRO (C10-C28)	**15 mg/L**

MiHpt-20
ND

MW-23
0.15 mg/L

MW-24
0.61 mg/L

MW-25
0.33 mg/L

TEC-MW6/B13

ECS-B4/MW4
ND

TEC-MW5/B9

MiHpt-21
2.4 mg/L

TEC-MW4/B4
0.17 mg/L

MiHpt-14
1.3 mg/L

TEC-MW7/B6

MiHpt-10

MiHpt-22
0.38 mg/L

MiHpt-5
0.48 mg/L

TEC-MW3/B10

MiHpt-8
0.17 mg/L

ECS-B2/MW2

TEC-MW2/B2
0.22 mg/L

MiHpt-15
ND

TEC-MW1/B12

MiHpt-7
3.6 mg/L

N

Legend

- Site Property
- Groundwater Monitoring Well

Isoconcentration (TPH-DRO)

- 0.15 mg/L
- 1.5 mg/L

Sample ID
TPH-DRO Concentration (mg/L)

Notes:
ND - Non-Detect
VDEQ-PDS = general permit discharge standard for petroleum contaminated water

0 25 50 100
Feet

TPH–DRO IN GROUNDWATER ISOCONCENTRATION MAP (6/7/18)

DESIGNED BRUZZESI	DATE 7/31/18
DRAWN CONNELLY	DATE 7/31/18

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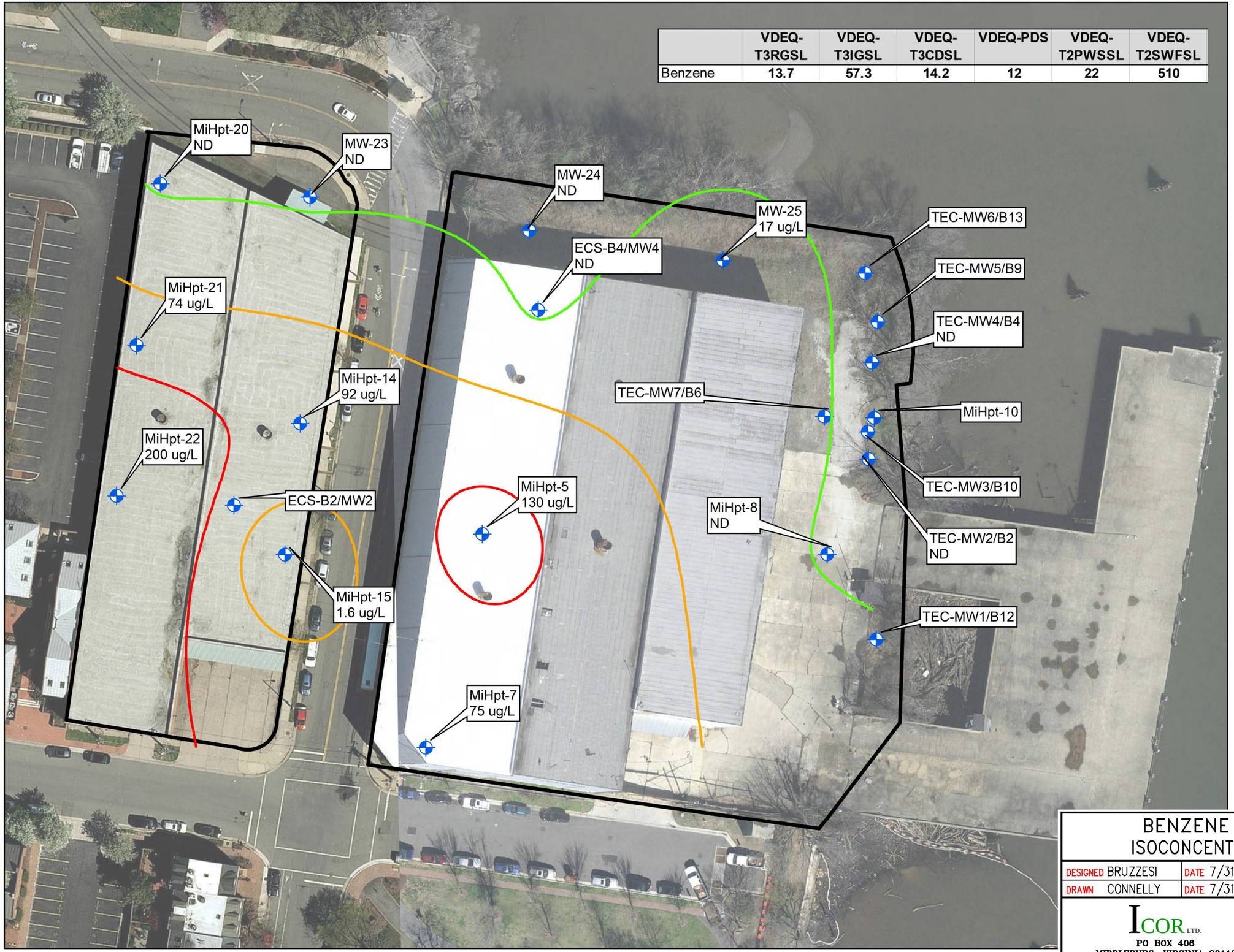
FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

PROJECT NO. 16.CI.001	SCALE: AS SHOWN
DRAWING NO.	FIGURE 17

16-CI-001-RTN-180607-SCR17-TPH DRO GW.DWG – July 6, 2016

	VDEQ-T3RGSL	VDEQ-T3IGSL	VDEQ-T3CDSL	VDEQ-PDS	VDEQ-T2PWSSL	VDEQ-T2SWFSL
Benzene	**13.7**	**57.3**	**14.2**	**12**	**22**	**510**



N

Legend

- Site Property
- Groundwater Monitoring Well

Isoconcentration (Benzene)

- 5 ug/L
- 50 ug/L
- 100 ug/L

Sample ID
Benzene Concentration (ug/L)

Notes:
ND - Non-Detect
VDEQ-T3RGSL = VDEQ Tier III residential groundwater vapor intrusion screening level
VDEQ-T3CGSL = VDEQ Tier III industrial groundwater vapor intrusion screening level
VDEQ-T3CDSL = VDEQ Tier III construction direct (<15 feet) screening level
VDEQ-PDS = general permit discharge standard for petroleum contaminated water
VDEQ-T2PWSSL = VDEQ Tier II public water supply screening level
VDEQ-T2SWFSL = VDEQ Tier II surface water fresh screening level

0 25 50 100 Feet

BENZENE IN GROUNDWATER ISOCONCENTRATION MAP (6/7/18)

DESIGNED BRUZZESI	DATE 7/31/18
DRAWN CONNELLY	DATE 7/31/18

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FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

PROJECT NO. 16.CI.001	SCALE: AS SHOWN
DRAWING NO.	FIGURE 18

16-CI-001-RTN-180607-SCR18-BENZENE GW.DWG — July 6, 2016

	VDEQ-T3RGSL	VDEQ-T3IGSL	VDEQ-T3CDSL	VDEQ-PDS
Naphthalene	17.2	72.3	0.722	8.9

MiHpt-20
0.52 ug/L

MW-23
1.3 ug/L

MW-24
3.4 ug/L

MW-25
77 ug/L

TEC-MW6/B13

ECS-B4/MW4
ND

TEC-MW5/B9

MiHpt-21
26 ug/L

TEC-MW4/B4
ND

MiHpt-14
62 ug/L

TEC-MW7/B6

MiHpt-10

MiHpt-22
ND

MiHpt-5
340 ug/L

TEC-MW3/B10

ECS-B2/MW2

MiHpt-8
21 ug/L

TEC-MW2/B2
ND

MiHpt-15
ND

TEC-MW1/B12

MiHpt-7
1400 ug/L

N

Site Property

Groundwater Monitoring Well

Isoconcentration (Naphthalene)

5 ug/L

50 ug/L

500 ug/L

Sample ID
Naphthalene Concentration (ug/L)

Notes:
ND - Non-Detect
VDEQ-T3RGSL = VDEQ Tier III residential groundwater vapor intrusion screening level
VDEQ-T3CGSL = VDEQ Tier III industrial groundwater vapor intrusion screening level
VDEQ-T3CDSL = VDEQ Tier III construction direct (<15 feet) screening level
VDEQ-PDS = general permit discharge standard for petroleum contaminated water

0 25 50 100
Feet

NAPHTHALENE IN GROUNDWATER ISOCONCENTRATION MAP (6/7/18)

DESIGNED BRUZZESI	DATE 7/31/18
DRAWN CONNELLY	DATE 7/31/18

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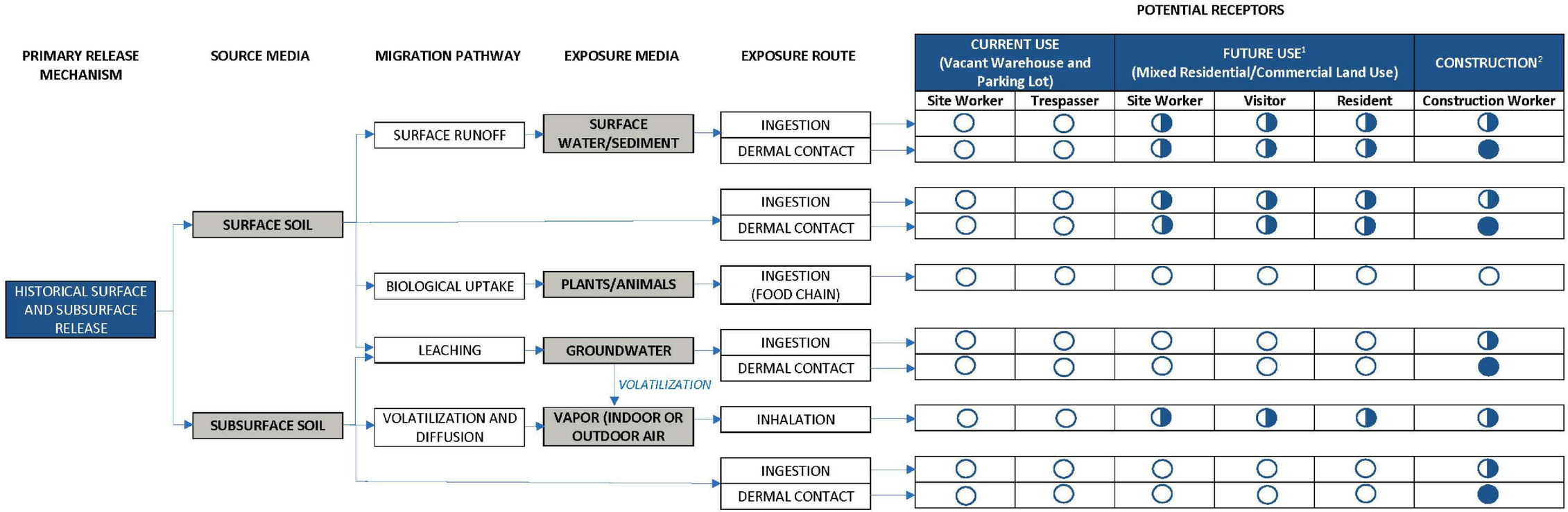
FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

PROJECT NO. 16.CI.001	SCALE: AS SHOWN
DRAWING NO.	FIGURE 19

16-CI-001-RTN-180607-SCR19-NAPH GW.DWG - July 6, 2016



Note:

1. Identified pathways will be addressed via remedial actions, engineering controls, and/or institutional controls.
2. Identified pathways will be addressed via remedial actions, engineering controls, and/or establishment of health and safety controls.

- COMPLETE PATHWAY
- POTENTIALLY COMPLETE PATHWAY
- INCOMPLETE PATHWAY

CONCEPTUAL SITE MODEL

DESIGNED BRUZZESI	DATE 04/04/17
DRAWN CONNELLY	DATE 04/04/17

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FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

PROJECT NO. 16.CI.001	SCALE: AS SHOWN
DRAWING NO.	FIGURE 20

TABLES

TABLE 1. TEST BORING SUMMARY

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

Test Boring ID	Date Advanced	Maximum Depth Investigated (feet bgs)	Real-Time						Soil							Groundwater Information			Soil Gas Information		
			Date Advanced	Depth Advanced (feet bgs)	Indication of Free Product	Elevated PID Reading (feet bgs)	Elevated FID Reading (feet bgs)	Elevated ECD Reading (feet bgs)	Test Boring Depth (feet bgs)	Staining Observed (feet bgs)	Odors Noted (feet bgs)	PID Reading Range (in ppm)	Date Collected	Laboratory Sample Depth (feet bgs)	Soil Sample Laboratory Analysis	Date Collected	Approximate Depth to Groundwater (feet bgs)	Groundwater Sample Laboratory Analyses	Date Collected	Depth of Soil Gas Sampling (feet bgs)	Soil Gas Laboratory Analysis
TEC-B1	4/27/06	14.0	NA	NA	NA	NA	NA	NA	14.0	NO	NO	0.0 - 0.0	4/27/06	11.0 -12.0	TPH-GRO, TPH-DRO	4/27/06	UKN	NO	NA	NA	NA
TEC-B2/MW2	4/27/06	14.0	NA	NA	NA	NA	NA	NA	14.0	NO	NO	0.0 - 0.0	4/27/06	12.0 -16.0	TPH-GRO, TPH-DRO	5/1/06	6.5	TPH-GRO, TPH-DRO, BTEX, NAP, MTBE	NA	NA	NA
																3/30/16	UKN	TPH-DRO, BTEX, NAP, MTBE			
																9/21/16	2.5	TPH-GRO, TPH-DRO, VOCs, NAP			
TEC-B3	4/27/06	12.0	NA	NA	NA	NA	NA	NA	12.0	NO	NO	0.0 - 0.0	4/27/06	11.0 -12.0	TPH-GRO, TPH-DRO	4/27/06	UKN	NO	NA	NA	NA
TEC-B4/MW4	4/27/06	12.0	NA	NA	NA	NA	NA	NA	12.0	NO	NO	0.0 - 1.4	4/27/06	9.0 - 10.0	TPH-GRO, TPH-DRO	5/1/06	7.0	TPH-GRO, TPH-DRO, BTEX, NAP, MTBE	NA	NA	NA
																3/30/16	UKN	TPH-DRO, BTEX, NAP, MTBE			
																9/21/16	2.3	TPH-GRO, TPH-DRO, VOCs, SVOCs, PPL Total Metals, PEST, PCBs, HERB			
TEC-B5	4/27/06	12.0	NA	NA	NA	NA	NA	NA	12.0	NO	NO	0.0 - 0.0	4/27/06	7.0 - 12.0	TPH-GRO, TPH-DRO	NA	8.0	NA	NA	NA	NA
TEC-B6/MW7	4/27/06	12.0	NA	NA	NA	NA	NA	NA	12.0	NO	6.6 - 7.6 (petroleum)	0.0 - 0.8	4/27/06	11.0 - 12.0	TPH-GRO, TPH-DRO	5/1/06	6.5	TPH-GRO, TPH-DRO, BTEX, NAP, MTBE	NA	NA	NA
TEC-B7	4/27/06	12.0	NA	NA	NA	NA	NA	NA	12.0	NO	NO	0.0 - 0.0	4/27/06	10.0 - 12.0	TPH-GRO, TPH-DRO	NA	12.0	NA	NA	NA	NA
TEC-B8	4/27/06	12.0	NA	NA	NA	NA	NA	NA	12.0	NO	NO	0.0 - 1.0	4/27/06	7.0 - 8.0	TPH-GRO, TPH-DRO	NA	UKN	NA	NA	NA	NA
TEC-B9/MW5	4/27/06	16.0	NA	NA	NA	NA	NA	NA	16.0	NO	12.0 - 14.0 (petroleum)	0.0 - 49.2	4/27/06	12.0 -14.0	TPH-GRO, TPH-DRO	5/1/06	8.0	TPH-GRO, TPH-DRO, BTEX, NAP, MTBE	NA	NA	NA
																3/30/16	UKN	TPH-DRO, BTEX, NAP, MTBE			
TEC-B10/MW3	4/27/06	12.0	NA	NA	NA	NA	NA	NA	12.0	NO	NO	0.0 - 0.2	4/27/06	11.0 -12.0	TPH-GRO, TPH-DRO	5/1/06	7.0	TPH-GRO, TPH-DRO, BTEX, NAP, MTBE	NA	NA	NA
																3/30/16	UKN	TPH-DRO, BTEX, NAP, MTBE			
TEC-B11	4/27/06	12.0	NA	NA	NA	NA	NA	NA	12.0	NO	NO	0.0 - 0.0	4/27/06	9.0 - 11.0	TPH-GRO, TPH-DRO	5/1/06	UKN	TPH-GRO, TPH-DRO, BTEX, NAP, MTBE	NA	NA	NA
TEC-B12/MW1	4/27/06	10.0	NA	NA	NA	NA	NA	NA	10.0	NO	NO	0.0 - 0.0	4/27/06	7.0 - 8.0	TPH-GRO, TPH-DRO	5/1/06	6.5	TPH-GRO, TPH-DRO, BTEX, NAP, MTBE	NA	NA	NA
TEC-B13/MW6	4/27/06	14.0	NA	NA	NA	NA	NA	NA	10.0	NO	NO	0.0 - 1.4	4/27/06	11.0 -12.0	TPH-GRO, TPH-DRO	5/1/06	6.0	TPH-GRO, TPH-DRO, BTEX, NAP, MTBE	NA	NA	NA
ECS-B1	12/19/07	60.0	NA	NA	NA	NA	NA	NA	60.0	UKN	UKN	UKN	12/19/07	1.0 - 2.5	RCRA Total Metals	NA	8.5	NA	NA	NA	NA
														2.5 - 4.0	TPH-DRO, VOCs						
														8.5 - 10.0	TPH-DRO, VOCs						
														18.5 - 20.0	TPH-DRO, VOCs						
ECS-B2/MW2	12/20/07	80.0	NA	NA	NA	NA	NA	NA	80.0	UKN	UKN	UKN	12/20/07	2.5 - 4.0	TPH-DRO, VOCs	1/4/08	8.5	TPH-DRO, VOCs, SVOCs, RCRA Total Metals	NA	NA	NA
														5.0 - 6.5	RCRA Total Metals	10/8/13	10.1	TPH-GRO, TPH-DRO, VOCs, SVOCs, PPL Total and Dissolved Metals			
														8.5 - 10.0	TPH-DRO, VOCs						
														13.5 - 15.0	TPH-DRO, VOCs						
ECS-B3	12/26/07	80.0	NA	NA	NA	NA	NA	NA	80.0	UKN	UKN	UKN	12/26/07	1.0 - 2.5	TPH-DRO, VOCs	NA	14.0	NA	NA	NA	NA
														2.5 - 4.0	Pesticides, PCBs, Herbicides						
														8.5 - 10.0	TPH-DRO, VOCs						
														13.5 - 15.0	TPH-DRO, VOCs						
														28.5 - 30.0	TPH-DRO, VOCs						
ECS-B4/MW4	12/27/07	80.0	NA	NA	NA	NA	NA	NA	80.0	UKN	UKN	UKN	12/27/07	5.0 - 6.5	TPH-DRO, VOCs	1/4/08	8.5	TPH-DRO, VOCs, SVOCs, RCRA Total Metals	NA	NA	NA
														13.5 - 15.0	TPH-DRO, VOCs	10/8/13	5.2	TPH-GRO, TPH-DRO, VOCs, SVOCs, PPL Total and Dissolved Metals			
														13.5 - 15.0	TPH-DRO, VOCs	9/21/16	5.8	TPH-GRO, TPH-DRO, VOCs, SVOCs, PPL Total Metals, PEST, PCBs, HERB			
														18.5 - 20.0	PEST, PCBs, HERB						
														23.5 - 25.0	TPH-DRO, VOCs						
														28.5 - 30.0	TPH-DRO, VOCs						

TABLE 1. TEST BORING SUMMARY

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

Test Boring ID	Date Advanced	Maximum Depth Investigated (feet bgs)	Real-Time						Soil							Groundwater Information			Soil Gas Information		
			Date Advanced	Depth Advanced (feet bgs)	Indication of Free Product	Elevated PID Reading (feet bgs)	Elevated FID Reading (feet bgs)	Elevated ECD Reading (feet bgs)	Test Boring Depth (feet bgs)	Staining Observed (feet bgs)	Odors Noted (feet bgs)	PID Reading Range (in ppm)	Date Collected	Laboratory Sample Depth (feet bgs)	Soil Sample Laboratory Analysis	Date Collected	Approximate Depth to Groundwater (feet bgs)	Groundwater Sample Laboratory Analyses	Date Collected	Depth of Soil Gas Sampling (feet bgs)	Soil Gas Laboratory Analysis
ECS-B5	1/2/08	60.0	NA	NA	NA	NA	NA	NA	60.0	UKN	UKN	UKN	1/2/08	2.5 - 4.0	TPH-DRO, VOCs	NA	8.5	NA	NA	NA	NA
														5.0 - 6.5	RCRA Total Metals						
														8.5 - 10.0	TPH-DRO, VOCs						
														28.5 - 30.0	TPH-DRO, VOCs						
														33.5 - 35.0	TPH-DRO, VOCs						
ECS-B6	12/28/07	80.0	NA	NA	NA	NA	NA	NA	80.0	UKN	UKN	UKN	12/28/07	1.0 - 2.5	PEST, PCBs, HERB	NA	5.0	NA	NA	NA	NA
														5.0 - 6.5	TPH-DRO, VOCs						
														8.5 - 10.0	TPH-DRO, VOCs						
														13.5 - 15.0	TPH-DRO, VOCs						
														18.5 - 20.0	TPH-DRO, VOCs, PEST, PCBs, HERB						
														23.5 - 25.0	RCRA Total Metals						
														28.5 - 30.0	TPH-DRO, VOCs						
ICOR-SB1	10/8/13	13.5	NA	NA	NA	NA	NA	NA	13.5	NO	NO	0.0 - 0.0	NA	NA	NA	10/8/13	5.4	TPH-GRO, TPH-DRO, VOCs, SVOCs, PPL Total and Dissolved Metals	NA	NA	NA
ICOR-SB2	10/8/13	15.0	NA	NA	NA	NA	NA	NA	15.0	NO	3.0 - 10.0 (oil and gasoline)	0.0 - 25.4	10/8/13	3.0 - 4.0	PPL Total Metals	NA	6.0	NA	NA	NA	NA
														5.0 - 6.0	TPH-GRO, TPH-DRO, TCL VOCs, TCL SVOCs						
ICOR-SB3	10/8/13 9/7/16	15.0	NA	NA	NA	NA	NA	NA	15.0	10.0 - 12.0 (oil)	10.0 - 12.0 (oil)	0.0 - 4.0	9/7/16	10.5 - 11.5	TPH-DRO, PCBs	NA	10.0	NA	NA	NA	NA
ICOR-SB4	10/8/13	10.0	NA	NA	NA	NA	NA	NA	10.0	NO	NO	0.0 - 0.0	NA	NA	NA	NA	9.0	NA	NA	NA	NA
ICOR-SB5	10/8/13	15.0	NA	NA	NA	NA	NA	NA	15.0	NO	NO	0.0 - 0.0	10/8/13	6.0 - 7.0	TPH-GRO, TPH-DRO, TCL VOCs, TCL SVOCs, PPL Total Metals	10/8/13	9.9	TPH-GRO, TPH-DRO, VOCs, SVOCs, PPL Total and Dissolved Metals	NA	NA	NA
ICOR-SB6	10/8/13	15.0	NA	NA	NA	NA	NA	NA	15.0	NO	12.0 - 15.0 (oil)	0.0 - 8.2	10/8/13	2.0 - 3.0	PPL Total Metals	10/8/13	10.5	TPH-GRO, TPH-DRO, VOCs, SVOCs, PPL Total and Dissolved Metals	NA	NA	NA
ICOR-SB7	10/8/13	15.0	NA	NA	NA	NA	NA	NA	15.0	NO	5.0 - 15.0 (oil from 5.0 - 7.0 and oil and gasoline from 7.0 -15.0)	0.0 - 163.0	10/8/13	7.5 - 8.5	TPH-GRO, TPH-DRO, TCL VOCs, TCL SVOCs, PPL Total Metals	10/8/13	8.0	TPH-GRO, TPH-DRO, VOCs, SVOCs, PPL Total and Dissolved Metals	NA	NA	NA
ICOR-SB8	10/8/13	15.0	NA	NA	NA	NA	NA	NA	15.0	NO	1.0 - 15.0 (oil and gasoline)	46.1 - >451.0	10/8/13	2.0 - 3.0	PPL Metals	10/8/13	8.1	TPH-GRO, TPH-DRO, VOCs, SVOCs	NA	NA	NA
														5.0 - 6.0	TPH-GRO, TPH-DRO, TCL VOCs, TCL SVOCs						
ICOR-SB9	10/8/13 9/7/16	17.0	NA	NA	NA	NA	NA	NA	17.0	NO	2.0 - 6.0 (oil)	0.0 - 2.8	9/7/16	4.0 - 5.0	PCBs	10/8/13	10.1	TPH-GRO, TPH-DRO, VOCs, SVOCs, PPL Total and Dissolved Metals	NA	NA	NA
													10/8/13	4.5 - 5.5	PPL Total Metals						
ICOR-SB10	10/8/13	15.0	NA	NA	NA	NA	NA	NA	15.0	NO	NO	0.0 - 0.0	10/8/13	2.0 - 3.0	PPL Total Metals	NA	8.5	NA	NA	NA	NA
ICOR-SB11/DSG4	10/8/13	15.0	NA		NA	NA	NA	NA	15.0	NO	NO	0.0 - 0.0	10/8/13	5.5 - 6.5	TPH-GRO, TPH-DRO, VOCs, SVOCs, PPL Total Metals	NA	9.1	NA	NA	NA	NA
ICOR-SB12	10/8/13	15.0	NA	NA	NA	NA	NA	NA	15.0	NO	NO	0.0 - 0.0	10/8/13	6.0 - 7.0	PPL Metals	NA	10.0	NA	NA	NA	NA
ICOR-SB13	10/8/13	15.0	NA	NA	NA	NA	NA	NA	15.0	NO	NO	0.0 - 0.0	10/8/13	5.5 - 6.5	TPH-GRO, TPH-DRO, PPL Total Metals, Chromium VI	NA	9.0	NA	NA	NA	NA
ECS-B7	10/7/14 9/7/16	60.0	NA	NA	NA	NA	NA	NA	60.0	NO	2.5 - 7.0 (gasoline)	UKN	10/7/14	2.5 - 10.0	RCRA Total and TCLP Metals	NA	9.5	NA	NA	NA	NA
													9/7/16	1.0 - 2.0	PPL Total Metals, PEST, PCBs, HERB						
														5.0 - 6.0	TPH-GRO, TPH-DRO, VOCs, NAP						

TABLE 1. TEST BORING SUMMARY

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

Test Boring ID	Date Advanced	Maximum Depth Investigated (feet bgs)	Real-Time						Soil							Groundwater Information			Soil Gas Information		
			Date Advanced	Depth Advanced (feet bgs)	Indication of Free Product	Elevated PID Reading (feet bgs)	Elevated FID Reading (feet bgs)	Elevated ECD Reading (feet bgs)	Test Boring Depth (feet bgs)	Staining Observed (feet bgs)	Odors Noted (feet bgs)	PID Reading Range (in ppm)	Date Collected	Laboratory Sample Depth (feet bgs)	Soil Sample Laboratory Analysis	Date Collected	Approximate Depth to Groundwater (feet bgs)	Groundwater Sample Laboratory Analyses	Date Collected	Depth of Soil Gas Sampling (feet bgs)	Soil Gas Laboratory Analysis
ECS-B8	10/6/14	60.0	NA	NA	NA	NA	NA	NA	60.0	NO	NO	UKN	10/6/14	2.5 - 4.0	RCRA Total and TCLP Metals	NA	9.0	NA	NA	NA	NA
ECS-B9	10/2/14	60.0	NA	NA	NA	NA	NA	NA	60.0	NO	NO	UKN	10/2/14	2.5 - 10.0	RCRA Total Metals	NA	9.5	NA	NA	NA	NA
ECS-B10	10/7/14	60.0	NA	NA	NA	NA	NA	NA	60.0	NO	NO	UKN	10/7/14	4.0 - 10.0	RCRA Total Metals	NA	7.5	NA	NA	NA	NA
ECS-B11	10/9/14	60.0	NA	NA	NA	NA	NA	NA	60.0	NO	NO	UKN	10/9/14	5.0 - 10.0	RCRA Total Metals	NA	9.5	NA	NA	NA	NA
ECS-B12	10/8/14	60.0	NA	NA	NA	NA	NA	NA	60.0	NO	NO	UKN	10/8/14	5.0 - 10.0	RCRA Total Metals	NA	9.5	NA	NA	NA	NA
MiHpt-1	6/23/16	25.00	6/23/16	25.00	NO	NO	NO	NO	NA	NA	NA	NA	NA	NA	NA	NA	UKN	NA	NA	NA	NA
MiHpt-2/DSG-1	6/23/16	25.00	6/23/16	25.00	NO	NO	NO	NO	NA	NA	NA	NA	NA	NA	NA	NA	UKN	NA	12/5/16	6.0 - 6.5	VOCs
MiHpt-3/DSG-2	6/23/16 9/6/16	25.15	6/23/16	25.15	NO	NO	NO	NO	5.0	NO	NO	0.0 - 0.0	9/6/16	1.0 - 2.0 4.0 - 5.0	PPL Total Metals Total AS	NA	UKN	NA	12/5/16	5.0 - 5.5	VOCs
MiHpt-4	6/23/16 9/6/16	24.95	6/23/16	24.95	NO	NO	NO	NO	5.0	NO	NO	0.0 - 0.0	9/6/16	1.0 - 2.0 4.0 - 5.0	PPL Total Metals Total AS	NA	UKN	NA	NA	NA	NA
MiHpt-5	6/23/16 9/7/16	28.25	6/23/16	28.25	NO	NO	NO	NO	16.0	NO	NO	0.0 - 0.0	9/7/16	1.0 - 2.0	Total AS	9/21/16	3.5	TPH-GRO, TPH-DRO, VOCs, SVOCs, PPL Total Metals, PEST, PCBs, HERB	NA	NA	NA
MiHpt-6/DSG-3	6/23/16 9/6/16	30.35	6/23/16	30.35	NO	NO	14.5 - 14.8	NO	5.0	NO	NO	0.0 - 0.0	9/6/16	1.0 - 2.0 4.0 - 5.0	PPL Total Metals PPL Total Metals	NA	NA	NA	12/5/16	3.5 - 4.0	VOCs
MiHpt-7	6/23/16 9/6/16	25.70	6/23/16	25.70	NO	6.5 - 9.0	6.5 - 9.0 and 10.0 - 11.0	NO	17.0	NO	5.0 - 8.0 (petro) 10.0 - 12.5 (swamp)	0.0 - 0.0	9/6/16	1.0 - 2.0 7.0 - 8.0	Total AS TPH-GRO, TPH-DRO, VOCs, NAP	9/21/16	3.8	TPH-GRO, TPH-DRO, VOCs, SVOCs, PPL Total Metals, PEST, PCBs, HERB	NA	NA	NA
MiHpt-8	6/24/16 9/6/16	50.05	6/24/16	50.05	NO	NO	4.0 - 5.0, 7.0 - 7.25, 14.0 - 17.0, and 22.0 - 42.0	NO	40.0	NO	1.0 - 40.0 (swamp) 11.5 - 12.0 (creosote)	0.0 - 0.0	9/6/16	4.0 - 5.0 37.8 - 38.8	TPH-GRO, TPH-DRO, VOCs, NAP TPH-GRO, TPH-DRO, VOCs, SVOCs	9/9/16 9/21/16	26.5 - 40.0 (Deep) 2.2	TPH-GRO, TPH-DRO, VOCs, SVOCs, OG+TPH TPH-GRO, TPH-DRO, VOCs, SVOCs, PPL Total Metals, PEST, PCBs, HERB	NA	NA	NA
MiHpt-9 (TEC-B6/MW7)	6/24/16	44.90	6/24/16	44.90	NO	NO	20.5 - 35.0	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MiHpt-10 (TEC-B10/MW3)	6/24/16 9/6/16	25.95	6/24/16	25.95	NO	NO	10.5 - 11.5 and 23.0 - 26.0	NO	23.0 - 28.0 (discrete)	NO	NO	NA	9/6/16	24.5 - 25.5	TPH-GRO, TPH-DRO, VOCs, SVOCs	9/6/16	25.0 - 28.5 (Deep)	TPH-GRO, TPH-DRO, VOCs, SVOCs	NA	NA	NA
MiHpt-11/DSG-4	7/5/16	49.95	7/5/16	49.95	NO	NO	NO	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	12/5/16	2.0 - 2.5	VOCs
MiHpt-12	7/6/16 9/7/16	21.95	7/6/16	21.95	NO	NO	NO	NO	2.0	NO	NO	0.0 - 0.0	9/7/16	1.0 - 2.0	Total AS	NA	NA	NA	NA	NA	NA
MiHpt-13	7/6/16 9/7/16	34.00	7/6/16	34.00	NO	NO	3.0 - 14.0	3.0 - 22.0	5.0	NO	4.0 - 5.0 (chemical)	0.0 - 0.0	9/7/16	1.0 - 2.0 4.0 - 5.0	PPL Total Metals Total AS				NA	NA	NA
MiHpt-14	7/6/16 9/8/16	25.10	7/6/16	25.10	NO	NO	10.0 - 16.0	4.0 - 9.0	28.5	NO	NO	0.0 - 0.0	9/8/16	1.0 - 2.0 4.0 - 5.0 5.0 - 6.0 25.0 - 26.0	PPL Total Metals, PEST, PCBs, HERB, Dioxin Total AS VOCs, NAP TPH-GRO, TPH-DRO, VOCs, SVOCs	9/8/16 9/21/16	25.0 - 28.5 (Deep) 3.6	TPH-GRO, TPH-DRO, VOCs, SVOCs, OG+TPH TPH-GRO, TPH-DRO, VOCs, SVOCs, PPL Total Metals, PEST, PCBs, HERB	12/5/16	Sub-Slab	VOCs
MiHpt-15	7/7/16 9/8/16	32.05	7/7/16	32.05	NO	NO	NO	13.0 - 25.0	16.0	NO	NO	0.0 - 0.0	9/8/16	1.0 - 2.0 4.0 - 5.0	PPL Total Metals Total AS	9/21/16	4.3	TPH-GRO, TPH-DRO, VOCs, SVOCs, PPL Total Metals, PEST, PCBs, HERB	12/5/16	Sub-Slab	VOCs
MiHpt-16 (ECS-B2/MW2, ICOR-SB10)	7/7/16 9/8/16	30.05	7/7/16	30.05	NO	NO	NO	NO	15.0	NO	NO	0.0 - 0.0	9/8/16	1.0 - 2.0 4.0 - 5.0 8.0 - 9.0	PEST, PCBs, HERB, Dioxin PEST, PCBs, HERB Total As	NA	NA	NA	NA	NA	NA
MiHpt-17	7/7/16 9/7/16	26.05	7/7/16	26.05	NO	NO	NO	NO	5.0	NO	NO	0.0 - 0.0	9/7/16	1.0 - 2.0 4.0 - 5.0	PPL Total Metals Total AS	NA	NA	NA	NA	NA	NA
MiHpt-18	7/7/16 9/7/16	24.10	7/7/16	24.10	NO	NO	23.0 - 23.5	NO	5.0	NO	NO	0.0 - 0.0	9/7/16	1.0 - 2.0	Total AS	NA	NA	NA	NA	NA	NA
MiHpt-19	7/7/16 9/7/16	33.90	7/7/16	33.90	NO	NO	NO	NO	5.0	NO	1.0 - 5.0 (chemical)	0.0 - 0.4	9/7/16	1.0 - 2.0 4.0 - 5.0	Total AS, Dioxin Total AS				NA	NA	NA
MiHpt-20	7/7/16 9/8/16	13.05	7/7/16	13.05	NO	NO	NO	NO	18.0	NO	13.5 - 15.0 (chemical)	0.0 - 0.0	9/8/16	1.5 - 2.5 4.0 - 5.0	PPL Total Metals, PEST, PCBs, HERB, Dioxin Total AS	9/21/16	2.2	TPH-GRO, TPH-DRO, VOCs, SVOCs, PPL Total Metals, PEST, PCBs, HERB	NA	NA	NA

TABLE 1. TEST BORING SUMMARY

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

Test Boring ID	Date Advanced	Maximum Depth Investigated (feet bgs)	Real-Time						Soil							Groundwater Information			Soil Gas Information		
			Date Advanced	Depth Advanced (feet bgs)	Indication of Free Product	Elevated PID Reading (feet bgs)	Elevated FID Reading (feet bgs)	Elevated ECD Reading (feet bgs)	Test Boring Depth (feet bgs)	Staining Observed (feet bgs)	Odors Noted (feet bgs)	PID Reading Range (in ppm)	Date Collected	Laboratory Sample Depth (feet bgs)	Soil Sample Laboratory Analysis	Date Collected	Approximate Depth to Groundwater (feet bgs)	Groundwater Sample Laboratory Analyses	Date Collected	Depth of Soil Gas Sampling (feet bgs)	Soil Gas Laboratory Analysis
MiHpt-21 (ICOR-SB8)	7/7/16 9/9/16	32.30	7/7/16	32.30	NO	7.0 - 11.0	7.0 - 11.0	7.0 - 10.0	28.5	NO	5.0 - 10.0 (gasoline)	0.0 - 10.5	9/9/16	1.0 - 2.0	PEST, PCBs, HERB	9/9/16	25.0 - 28.5 (Deep)	TPH-GRO, TPH-DRO, VOCs, SVOCs, FOG+TPH	12/5/16	Sub-Slab	VOCs
														4.5 - 5.5	Total AS, PEST, PCBs, HERB	9/21/16	4.4	TPH-GRO, TPH-DRO, VOCs, SVOCs, PPL Total Metals, PEST, PCBs, HERB			
														9.0 - 10.0	TPH-GRO, TPH-DRO, VOCs, NAP						
														24.0 - 25.0	TPH-GRO, TPH-DRO, VOCs, SVOCs						
MiHpt-22 (ECS-B8, ICOR-SB7)	7/7/16 9/9/16	30.90	7/7/16	30.90	NO	5.0 - 5.5 and 8.0 - 30.0	2.5 - 3.0, 5.0 - 5.5, and 8.0 - 30.0	NO	28.5	NO	7.0 - 7.5 (gasoline) 7.5 - 19.75 (gasoline and chemical) 19.75 - 28.5 (chemical)	0.0 - 287.0	9/9/16	1.0 - 2.0	PPL Total Metals, PEST, PCBs, HERB	9/9/16	25.0 - 28.5 (Deep)	TPH-GRO, TPH-DRO, VOCs, SVOCs, OG+TPH	12/5/16	Sub-Slab	VOCs
														4.0 - 5.0	Total AS, PEST, PCBs, HERB	9/21/16	4.3	TPH-GRO, TPH-DRO, VOCs, SVOCs, PPL Total Metals, PEST, PCBs, HERB			
														19.0 - 20.0	TPH-GRO, TPH-DRO, VOCs, NAP						
														24.0 - 25.0	TPH-GRO, TPH-DRO, VOCs, SVOCs						
ICOR-SB14	9/7/16	5.00	NA	NA	NA	NA	NA	NA	5.0	NO	NO	0.0 - 0.0	9/7/16	1.0 - 2.0	Total AS	NA	NA	NA	NA	NA	NA
														4.0 - 5.0	Total AS						
ICOR-SB15	9/7/16	5.00	NA	NA	NA	NA	NA	NA	5.0	NO	NO	0.0 - 0.0	9/7/16	1.0 - 2.0	Dioxin	NA	NA	NA	NA	NA	NA
MW23	1/22/18	20.0	NA	NA	NA	NA	NA	NA	16.0	11.0 - 12.0 (black)	0.5-1.5 and 11.0 - 12.5 (petroleum)	0.0 - 0.0	1/22/18	11.5 - 12.5	TPH-GRO, TPH-DRO, VOCs, SVOCs	1/29/18	10.0	TPH-GRO, TPH-DRO, VOCs, SVOCs	NA	NA	NA
MW24	1/22/18	19.0	NA	NA	NA	NA	NA	NA	17.0	NO	18.0 - 19.0 (petroleum)	0.0 - 0.0	1/22/18	8.0 - 9.0	TPH-GRO, TPH-DRO, VOCs, SVOCs	1/29/18	8.0	TPH-GRO, TPH-DRO, VOCs, SVOCs	NA	NA	NA
MW25	1/22/18	19.0	NA	NA	NA	NA	NA	NA	5.0	NO	9.0 - 19.0 (petroleum)	0.0 - 0.0	1/22/18	9.0 - 10.0	TPH-GRO, TPH-DRO, VOCs, SVOCs	1/29/18	8.0	TPH-GRO, TPH-DRO, VOCs, SVOCs	NA	NA	NA

NOTES:
PID = photo-ionization detector
FID = flame-ionization detector
ECD = electron captor detector
bsg = below surface grade
ppm = parts per million
NO = no indication of condition noted or observed
NA = not applicable
UKN = unknown, not reported
TPH-GRO = gasoline range total petroleum hydrocarbons
TPH-DRO = diesel range total petroleum hydrocarbons
BTEX = benzene, toluene, ethylbenzene, and total xylenes
NAP = naphthalene
MTBE = methyl t-butyl ether
VOCs = volatile organic compounds
SVOCs = semi-VOCs
PCBs = polychlorinated biphenyls
PEST = pesticides
HERB = herbicides
RCRA = Resource Conservation and Recovery Act
PPL = Priority Pollutant Metals
AS = arsenic
OG = oil and grease
Dioxin samples were only be analyzed for 2,3,7,8-TCDD
Yellow highlighting indicates observation of note
Blue highlighting designates a deep groundwater sample

TABLE 2. WELL CONSTRUCTION INFORMATION

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

Well ID	Date Installed	Well Diameter (inches ID)	Well Material	Total Depth (feet bgs)	Screen Interval (feet bgs)
TEC-MW1	4/27/06	1	PVC	10.0	UKN
TEC-MW2	4/27/06	1	PVC	16.0	UKN
TEC-MW3	UKN	1	PVC	UKN	UKN
TEC-MW4	4/27/06	1	PVC	12.0	UKN
TEC-MW5	4/27/06	1	PVC	16.0	UKN
TEC-MW6	4/28/06	1	PVC	16.0	UKN
TEC-MW7	4/27/06	1	PVC	12.0	UKN
ECS-MW2	12/20/07	1	PVC	UKN	UKN
ECS-MW4	12/27/07	1	PVC	UKN	UKN
MiHpt-5	9/7/16	1	PVC	16.0	6.0 - 16.0
MiHpt-7	9/6/16	1	PVC	17.0	7.0 - 17.0
MiHpt-8	9/6/16	1	PVC	20.0	10.0 - 20.0
MiHpt-14	9/8/16	1	PVC	16.0	6.0 - 16.0
MiHpt-15	9/8/16	1	PVC	16.0	6.0 - 16.0
MiHpt-20	9/8/16	1	PVC	18.0	8.0 - 18.0
MiHpt-21	9/9/16	1	PVC	16.0	6.0 - 16.0
MiHpt-22	9/9/16	1	PVC	16.0	6.0 - 16.0
MW23	1/22/18	1	PVC	19.8	4.8 - 19.8
MW24	1/22/18	1	PVC	19.0	4.0 - 19.0
MW25	1/22/18	1	PVC	19.0	4.0 - 19.0

NOTES:
ID = inner diameter
bgs = below surface grade
UKN = unknown

TABLE 3. HISTORICAL GROUNDWATER MEASUREMENTS

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

Well ID	Well TOC Elevation (feet)	Date	Total Well Depth (feet bgs)	Depth to Groundwater (feet bgs)	Groundwater Elevation (feet)
TEC-MW1	7.92	5/4/06	10.0	5.64	2.28
TEC-MW2	9.26	5/4/06	16.0	6.79	2.47
		9/21/16		6.74	2.52
		2/7/17		7.21	2.05
		1/29/18		7.81	1.45
		6/7/18		6.32	2.94
TEC-MW3	9.47	5/4/06	UKN	7.00	2.47
		9/21/16		7.22	2.25
		2/7/17		7.44	2.03
		1/29/18		OBS	OBS
		6/7/18		6.39	3.08
TEC-MW4	9.51	5/4/06	12.0	7.05	2.46
		9/21/16		7.23	2.28
		2/7/17		7.50	2.01
		1/29/18		8.12	1.39
		6/7/18		6.45	3.06
TEC-MW5	8.02	5/4/06	16.0	7.89	0.13
		9/21/16		7.58	0.44
		2/7/17		6.83	1.19
		1/29/18		6.31	1.71
TEC-MW6	7.52	5/4/06	16.0	6.40	1.12
TEC-MW7	8.70	5/4/06	12.0	6.49	2.21
ECS-MW2	11.48	12/20/07	UKN	10.08	1.40
		9/21/16		6.97	4.51
		2/7/17		6.53	4.95
		1/29/18		DRY	DRY
		6/7/18		DRY	DRY
ECS-MW4	8.76	12/20/07	UKN	9.15	-0.39
		9/21/16		2.98	5.78
		2/7/17		3.38	5.38
		1/29/18		4.65	4.11
		6/7/18		2.73	6.03
MiHpt-5	8.82	9/21/16	16.0	5.37	3.45
		2/7/17		6.62	2.20
		1/29/18		6.31	2.51
		6/7/18		4.52	4.30
MiHpt-7	8.97	9/21/16	17.0	5.18	3.79
		2/7/17		5.07	3.90
		1/29/17		6.11	2.86
		6/7/18		4.50	4.47

TABLE 3. HISTORICAL GROUNDWATER MEASUREMENTS

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

Well ID	Well TOC Elevation (feet)	Date	Total Well Depth (feet bgs)	Depth to Groundwater (feet bgs)	Groundwater Elevation (feet)
MiHpt-8	8.21	9/21/16	20.0	5.99	2.22
		2/7/17		6.19	2.02
		1/29/18		6.16	2.05
		6/7/18		5.13	3.08
MiHpt-14	11.48	9/21/16	16.0	7.90	3.58
		2/7/17		7.62	3.86
		1/29/18		8.95	2.53
		6/7/18		7.39	4.09
MiHpt-15	11.54	9/21/16	16.0	7.22	4.32
		2/7/17		6.59	4.95
		1/29/17		8.11	3.43
		6/7/18		6.58	4.96
MiHpt-20	11.59	9/21/16	18.0	9.41	2.18
		2/7/17		9.50	2.09
		1/29/18		10.57	1.02
		6/7/18		8.14	3.45
MiHpt-21	11.56	9/21/16	16.0	7.19	4.37
		2/7/17		6.99	4.57
		1/29/18		11.05	0.51
		6/7/18		6.70	4.86
MiHpt-22	11.63	9/21/16	16.0	7.30	4.33
		2/7/17		6.99	4.64
		1/29/18		8.10	3.53
		6/7/18		6.57	5.06
MW23	9.12	1/29/18	19.8	8.27	0.85
		6/7/18		6.43	2.69
MW24	8.62	1/29/18	19.0	7.61	1.01
		6/7/18		5.79	2.83
MW25	7.73	1/29/18	19.0	6.49	1.24
		6/7/18		4.85	2.88

NOTES:
All survey data generated by a professional surveyor
TOC = top of casing
bgs = below ground surface
UKN = unknown
OBS = obstructed
DRY = well dry

TABLE 4A. ECS SOIL ANALYTICAL RESULTS (DETECTIONS ONLY)

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

Sample ID:	Units	VDEQ-PSSS	VDEQ-T2RSL	VDEQ-T3ISL	ECS-B1				ECS-B2				ECS-B3					ECS-B4				
					(1-2.5)	(2.5-4)	(8.5-10)	(18.5-20)	(2.5-4)	(5-6.5)	(8.5-10)	(13.5-15)	(1-2.5)	(2.5-4)	(8.5-10)	(13.5-15)	(28.5-30)	(5-6.5)	(13.5-15)	(18.5-20)	(23.5-25)	(28.5-30)
Date:					1/3/08	1/3/08	1/3/08	1/3/08	1/3/08	1/3/08	1/3/08	1/3/08	1/3/08	1/3/08	1/3/08	1/3/08	1/3/08	1/3/08	1/3/08	1/3/08	1/3/08	1/3/08
TPH																						
TPH-DRO	mg/kg	**11000**	**NE**	**NE**	NA	**10200**	**7060**	ND	**56**	NA	**17**	**70**	**115**	NA	**40**	ND	**27**	**123**	**22**	NA	**22**	ND
VOCs																						
Benzene	ug/kg	**NE**	**51.1**	**42000**	NA	ND	**2.8**	ND	ND	NA	ND	**11**	**9.8**	NA	**5120**	ND	ND	ND	**6.3**	NA	**4.6**	ND
2-Butanone (MEK)	ug/kg	**NE**	**2340**	**19000000**	NA	ND	ND	ND	ND	NA	**7.3**	ND	ND	NA	ND	ND	ND	ND	ND	NA	ND	ND
n-Butylbenzene	ug/kg	**NE**	**6440**	**5800000**	NA	ND	ND	ND	ND	NA	ND	ND	ND	NA	ND	ND	ND	ND	ND	NA	ND	ND
sec-Butylbenzene	ug/kg	**NE**	**11700**	**12000000**	NA	ND	ND	ND	ND	NA	ND	ND	ND	NA	ND	ND	ND	ND	ND	NA	ND	ND
tert-Butylbenzene	ug/kg	**NE**	**3100**	**12000000**	NA	ND	ND	ND	ND	NA	ND	ND	ND	NA	ND	ND	ND	ND	ND	NA	ND	ND
Carbon Disulfide	ug/kg	**NE**	**477**	**350000**	NA	ND	ND	ND	ND	NA	ND	ND	ND	NA	ND	ND	ND	ND	ND	NA	ND	ND
Ethylbenzene	ug/kg	**NE**	**15700**	**250000**	NA	ND	ND	ND	ND	NA	ND	**17**	**8.6**	NA	ND	ND	ND	**2.2**	**5.1**	NA	**4.9**	ND
Isopropylbenzene (Cumene)	ug/kg	**NE**	**1470**	**990000**	NA	ND	ND	ND	ND	NA	ND	ND	ND	NA	ND	ND	ND	ND	ND	NA	**2.5**	ND
p-Isopropyltoluene	ug/kg	**NE**	**1470**	**990000**	NA	ND	ND	ND	ND	NA	ND	ND	ND	NA	ND	ND	ND	ND	ND	NA	ND	ND
Methyl-t-butyl ether	ug/kg	**NE**	**631**	**2100000**	NA	ND	ND	ND	ND	NA	ND	ND	**4.2**	NA	ND	**2.7**	**3.2**	ND	ND	NA	**2.6**	ND
Naphthalene	ug/kg	**NE**	**40.1**	**59000**	NA	**136**	**70**	ND	ND	NA	ND	**204**	**7.4**	NA	ND	**84**	ND	ND	**66**	NA	**155**	**4.9**
n-Propylbenzene	ug/kg	**NE**	**2460**	**2400000**	NA	ND	ND	ND	ND	NA	ND	ND	ND	NA	ND	ND	ND	ND	ND	NA	ND	ND
Styrene	ug/kg	**NE**	**2200**	**3500000**	NA	ND	ND	ND	ND	NA	ND	ND	**4.2**	NA	ND	ND	ND	ND	ND	NA	ND	ND
Toluene	ug/kg	**NE**	**13800**	**4700000**	NA	**7.7**	**13**	**3.4**	**4.2**	NA	**4.2**	**4.7**	**70**	NA	**196**	**5.6**	**2.7**	**16**	**11**	NA	**29**	ND
1,2,4-Trimethylbenzene	ug/kg	**NE**	**162**	**180000**	NA	ND	**13**	ND	ND	NA	ND	**14**	**16**	NA	ND	**10**	ND	**4.9**	**6.5**	NA	**12**	ND
1,3,5-Trimethylbenzene	ug/kg	**NE**	**172**	**150000**	NA	ND	**13**	ND	ND	NA	ND	**14**	**7.5**	NA	ND	**11**	ND	**4.7**	**2.8**	NA	**5**	ND
Total Xylenes	ug/kg	**NE**	**58000**	**250000**	NA	**3.4**	**14.1**	ND	ND	NA	ND	**16.3**	**58**	NA	ND	**11.1**	ND	**12.2**	**9**	NA	**24.7**	ND
RCRA Metals																						
Arsenic	mg/kg	**NE**	**3.5**	**30**	**4.3**	NA	NA	NA	NA	**1090**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	mg/kg	**NE**	**1500**	**22000**	**82.3**	NA	NA	NA	NA	**90.9**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	mg/kg	**NE**	**7.1**	**98**	ND	NA	NA	NA	NA	**23.6**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/kg	**NE**	**3600000***	**NE***	**16.3**	NA	NA	NA	NA	**17.5**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	mg/kg	**NE**	**270**	**800**	**14.9**	NA	NA	NA	NA	**297**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	mg/kg	**NE**	**1.1**	**4.6**	ND	NA	NA	NA	NA	**75.1**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	mg/kg	**NE**	**5.2**	**580**	ND	NA	NA	NA	NA	**10.3**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	mg/kg	**NE**	**1.6**	**580**	ND	NA	NA	NA	NA	**1.41**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides, PCBs, and Herbicides																						
Pesticides					NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	ND	NA	NA
PCBs					NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	ND	NA	NA
Herbicides					NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	ND	NA	NA

NOTES:
(10-13.5) = designates depth sample was collected below ground surface
TPH = total petroleum hydrocarbons
TPH-DRO = diesel range TPH
TPH-GRO = gasoline range TPH
VOCs = volatile organic compounds
RCRA = Resource Conservation and Recovery Act
PCBs = polychlorinated biphenyls
ug/kg = micrograms per kilogram
mg/kg = milligrams per kilogram
NA = not analyzed
ND = not detected above the analytical method reporting limit
VDEQ = Commonwealth of Virginia Department of Environmental Quality
VDEQ-PSS = VDEQ petroleum saturated soil standard
VDEQ-T2RSL = VDEQ Tier II residential screening level
VDEQ-T3ISL = VDEQ Tier III industrial screening level
Bold and right justification designates target compound was detected at a concentration above RL
* = total chromium (chromium III and VI)
Yellow highlighting designates target compound was detected at a concentration above a VDEQ screening concentration in at least 1 sample

TABLE 4A. ECS SOIL ANALYTICAL RESULTS (DETECTIONS ONLY)

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

Sample ID:	Units	VDEQ-PSSS	VDEQ-T2RSL	VDEQ-T3ISL	ECS-B5					ECS-B6						
					(2.5-4)	(5-6.5)	(8.5-10)	(28.5-30)	(33.5-35)	(1-2.5)	(5-6.5)	(8.5-10)	(13.5-15)	(18.5-20)	(23.5-25)	(28.5-30)
Date:					1/3/08	1/3/08	1/3/08	1/3/08	1/3/08	1/3/08	1/3/08	1/3/08	1/3/08	1/3/08	1/3/08	1/3/08
TPH																
TPH-DRO	mg/kg	**11000**	**NE**	**NE**	**95**	NA	**20**	**58**	ND	NA	**142**	**111**	**31**	**68**	NA	**33**
VOCs																
Benzene	ug/kg	**NE**	**51.1**	**42000**	ND	NA	ND	ND	**3.7**	NA	**977**	ND	**16**	ND	NA	ND
2-Butanone (MEK)	ug/kg	**NE**	**2340**	**19000000**	ND	NA	ND	**7.3**	ND	NA	ND	ND	ND	ND	NA	ND
n-Butylbenzene	ug/kg	**NE**	**6440**	**5800000**	ND	NA	ND	ND	ND	NA	**366**	ND	**3.2**	ND	NA	**3.6**
sec-Butylbenzene	ug/kg	**NE**	**11700**	**12000000**	ND	NA	ND	ND	ND	NA	ND	ND	**26**	ND	NA	ND
tert-Butylbenzene	ug/kg	**NE**	**3100**	**12000000**	ND	NA	ND	ND	ND	NA	ND	ND	**11**	ND	NA	ND
Carbon Disulfide	ug/kg	**NE**	**477**	**350000**	ND	NA	**3.3**	ND	**11**	NA	ND	ND	ND	ND	NA	ND
Ethylbenzene	ug/kg	**NE**	**15700**	**250000**	ND	NA	ND	ND	**7**	NA	**1360**	ND	**6.4**	ND	NA	ND
Isopropylbenzene (Cumene)	ug/kg	**NE**	**1470**	**990000**	ND	NA	ND	ND	ND	NA	ND	ND	**8.4**	ND	NA	ND
p-Isopropyltoluene	ug/kg	**NE**	**1470**	**990000**	ND	NA	**166**	**226**	**419**	NA	**473**	ND	**3.8**	ND	NA	ND
Methyl-t-butyl ether	ug/kg	**NE**	**631**	**2100000**	ND	NA	ND	ND	ND	NA	ND	ND	ND	ND	NA	ND
Naphthalene	ug/kg	**NE**	**40.1**	**59000**	ND	NA	**14**	**5.9**	**27**	NA	ND	ND	**5.2**	**5500**	NA	ND
n-Propylbenzene	ug/kg	**NE**	**2460**	**2400000**	ND	NA	ND	ND	ND	NA	ND	ND	**5.8**	ND	NA	**2.7**
Styrene	ug/kg	**NE**	**2200**	**3500000**	ND	NA	ND	ND	ND	NA	ND	ND	ND	ND	NA	ND
Toluene	ug/kg	**NE**	**13800**	**4700000**	ND	NA	**4.5**	**5.7**	**8.4**	NA	**3800**	**238**	**36**	ND	NA	**2.9**
1,2,4-Trimethylbenzene	ug/kg	**NE**	**162**	**180000**	**4**	NA	**11**	**9.8**	**9.3**	NA	**1050**	ND	**18**	ND	NA	**19**
1,3,5-Trimethylbenzene	ug/kg	**NE**	**172**	**150000**	ND	NA	**4.6**	**3.8**	**2.8**	NA	**1870**	ND	**11**	ND	NA	**9.8**
Total Xylenes	ug/kg	**NE**	**58000**	**250000**	ND	NA	ND	**3.3**	**3.7**	NA	**4209**	**361**	**38**	ND	NA	**3.5**
RCRA Metals																
Arsenic	mg/kg	**NE**	**3.5**	**30**	NA	**7**	NA	NA	NA	NA	NA	NA	NA	NA	**6.6**	NA
Barium	mg/kg	**NE**	**1500**	**22000**	NA	**99.7**	NA	NA	NA	NA	NA	NA	NA	NA	**46**	NA
Cadmium	mg/kg	**NE**	**7.1**	**98**	NA	**3.79**	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
Chromium	mg/kg	**NE**	**3600000***	**NE***	NA	**25.8**	NA	NA	NA	NA	NA	NA	NA	NA	**19.9**	NA
Lead	mg/kg	**NE**	**270**	**800**	NA	**11.5**	NA	NA	NA	NA	NA	NA	NA	NA	**39.5**	NA
Mercury	mg/kg	**NE**	**1.1**	**4.6**	NA	**0.25**	NA	NA	NA	NA	NA	NA	NA	NA	**0.06**	NA
Selenium	mg/kg	**NE**	**5.2**	**580**	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
Silver	mg/kg	**NE**	**1.6**	**580**	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
Pesticides, PCBs, and Herbicides																
Pesticides					NA	NA	NA	NA	NA	ND	NA	NA	NA	ND	NA	NA
PCBs					NA	NA	NA	NA	NA	ND	NA	NA	NA	ND	NA	NA
Herbicides					NA	NA	NA	NA	NA	ND	NA	NA	NA	ND	NA	NA

NOTES:
(10-13.5) = designates depth sample was collected below ground surface
TPH = total petroleum hydrocarbons
TPH-DRO = diesel range TPH
TPH-GRO = gasoline range TPH
VOCs = volatile organic compounds
RCRA = Resource Conservation and Recovery Act
PCBs = polychlorinated biphenyls
ug/kg = micrograms per kilogram
mg/kg = milligrams per kilogram
NA = not analyzed
ND = not detected above the analytical method reporting limit
VDEQ = Commonwealth of Virginia Department of Environmental Quality
VDEQ-PSS = VDEQ petroleum saturated soil standard
VDEQ-T2RSL = VDEQ Tier II residential screening level
VDEQ-T3ISL = VDEQ Tier III industrial screening level
Bold and right justification designates target compound was detected at a concentration above RL
* = total chromium (chromium III and VI)
Yellow highlighting designates target compound was detected at a concentration above a VDEQ screening concentration in at least 1 sample

TABLE 4B. ICOR 2013 SOIL ANALYTICAL RESULTS (DETECTIONS ONLY)

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

Sample ID:	Units	VDEQ-PSSS	VDEQ-T2RSL	VDEQ-T3ISL	ICOR-SB2(3-4)	ICOR-SB2(5-6)	ICOR-SB5(6-7)	ICOR-SB6(2-3)	ICOR-SB7(7.5-8.5)	ICOR-SB8(2-3)	ICOR-SB8(7.5-8.5)	ICOR-SB9(4.5-5.5)
Date:					10/8/13	10/8/13	10/8/13	10/8/13	10/8/13	10/8/13	10/8/13	10/8/13
TPH EPA 8015												
TPH-GRO	mg/kg	**8300**	**NE**	**NE**	NA	**1.2**	<0.11	NA	**240**	NA	**370**	NA
TPH-DRO	mg/kg	**11000**	**NE**	**NE**	NA	**77**	**420**	NA	**3800**	NA	**42**	NA
TCL VOCs EPA 8260B												
Acetone	ug/kg	**NE**	**574000**	**67000000**	NA	<23	<23	NA	<2200	NA	<2400	NA
Isopropylbenzene	ug/kg	**NE**	**1470**	**990000**	NA	**15**	<5.6	NA	<560	NA	<600	NA
Methylcyclohexane	ug/kg	**NE**	**NE**	**NE**	NA	**41**	<23	NA	<2200	NA	**16000**	NA
Naphthalene	ug/kg	**NE**	**40.1**	**59000**	NA	**14**	**7.4**	NA	<560	NA	<600	NA
TCL SVOCs EPA 8270C												
Fluoranthene	ug/kg	**NE**	**178000**	**3000000**	NA	**260**	<190	NA	<740	NA	<200	NA
Pyrene	ug/kg	**NE**	**26100**	**2300000**	NA	**210**	<190	NA	<740	NA	<200	NA
PPL Metals EPA 6020A												
Antimony	mg/kg	**NE**	**3.1**	**47**	<2.4	NA	<2.1	<2.6	<2.8	<2.8	<2.2	<2.8
Arsenic	mg/kg	**NE**	**3.5**	**30**	**2.8**	NA	**3.8**	**11**	**130**	**600**	**12**	**3.6**
Chromium	mg/kg	**NE**	**3600000***	**NE***	**20**	NA	<2.1	**26**	**11**	**22**	**12**	**10**
Copper	mg/kg	**NE**	**310**	**4700**	**18**	NA	**4.6**	**200**	**7.6**	**18**	**5.0**	**12**
Lead	mg/kg	**NE**	**270**	**800**	**15**	NA	**16**	**32**	**4.7**	**9.1**	**7.2**	**60**
Mercury	mg/kg	**NE**	**1.1**	**4.6**	<0.095	NA	<0.084	<0.10	<0.11	<0.11	<0.089	**0.56**
Nickel	mg/kg	**NE**	**50.9**	**2200**	**22**	NA	<2.1	**26**	**5.9**	**21**	**22**	**9.4**
Selenium	mg/kg	**NE**	**5.2**	**580**	<2.4	NA	<2.1	<2.6	<2.8	<2.8	<2.2	<2.8
Silver	mg/kg	**NE**	**1.6**	**580**	<2.4	NA	<2.1	<2.6	<2.8	<2.8	<2.2	<2.8
Thallium	mg/kg	**NE**	**0.078**	**1.2**	<1.9	NA	<1.7	<2.1	<2.2	<2.2	<1.8	<2.2
Zinc	mg/kg	**NE**	**746**	**35000**	**68**	NA	<8.4	**1100**	**33**	**63**	**37**	5000
Chromium VI EPA 7196A												
Chromium VI	mg/kg	**NE**	**0.134**	**63**	NA	NA	NA	NA	NA	NA	NA	NA
TCLP RCRA Metals EPA 3010A/6020A												
Arsenic	ug/L	**NE**	**NE**	**NE**	NA	NA	NA	NA	NA	NA	NA	NA
Lead	ug/L	**NE**	**NE**	**NE**	NA	NA	NA	NA	NA	NA	NA	NA

NOTES:
(0.5-1.5) = designates depth sample was collected below ground surface
TPH = total petroleum hydrocarbons
TPH-DRO = diesel range TPH
TPH-GRO = gasoline range TPH
TCL = Target Compound List
VOCs = volatile organic compounds
SVOCs = semi-VOCs
PCBs = polychlorinated biphenyls
PPL = Priority Pollutant List
TCLP = Toxic Characteristic Leaching Procedure
RCRA = Resource Conservation and Recovery Act
EPA 8260B = United States Environmental Protection Agency SW-846 analytical method
ug/kg = micrograms per kilogram
mg/kg = milligrams per kilogram
ug/L = micrograms per liter
NA = not analyzed
VDEQ = Commonwealth of Virginia Department of Environmental Quality
VDEQ-PSS = VDEQ petroleum saturated soil standard
VDEQ-T2RSL = VDEQ Tier II residential screening level
VDEQ-T3ISL = VDEQ Tier III industrial screening level
Bold and right justification designates target compound was detected at a concentration above RL
* = total chromium (chromium III and VI)
Yellow highlighting designates target compound was detected at a concentration above a VDEQ screening concentration in at least 1 sample

TABLE 4B. ICOR 2013 SOIL ANALYTICAL RESULTS (DETECTIONS ONLY)

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

Sample ID:	Units	VDEQ-PSSS	VDEQ-T2RSL	VDEQ-T3ISL	ICOR-SB10(2-3)	ICOR-SB10(5.5-6.5)	ICOR-SB11(5.5-6.5)	ICOR-SB12(6-7)	ICOR-SB13(5.5-6.5)
Date:					10/8/13	10/8/13	10/8/13	10/8/13	10/8/13
TPH EPA 8015									
TPH-GRO	mg/kg	**8300**	**NE**	**NE**	NA	NA	<0.12	NA	<0.12
TPH-DRO	mg/kg	**11000**	**NE**	**NE**	NA	NA	<4.8	NA	<5.1
TCL VOCs EPA 8260B									
Acetone	ug/kg	**NE**	**574000**	**67000000**	NA	NA	**77**	NA	NA
Isopropylbenzene	ug/kg	**NE**	**1470**	**990000**	NA	NA	<5.9	NA	NA
Methylcyclohexane	ug/kg	**NE**	**NE**	**NE**	NA	NA	<24	NA	NA
Naphthalene	ug/kg	**NE**	**40.1**	**59000**	NA	NA	<5.9	NA	NA
TCL SVOCs EPA 8270C									
Fluoranthene	ug/kg	**NE**	**178000**	**3000000**	NA	NA	<210	NA	NA
Pyrene	ug/kg	**NE**	**26100**	**2300000**	NA	NA	<210	NA	NA
PPL Metals EPA 6020A									
Antimony	mg/kg	**NE**	**3.1**	**47**	**12**	<2.3	<3.0	<2.0	<2.8
Arsenic	mg/kg	**NE**	**3.5**	**30**	**1300**	**190**	**3.9**	**3.1**	**9.9**
Chromium	mg/kg	**NE**	**3600000***	**NE***	**18**	**19**	**24**	**22**	**30**
Copper	mg/kg	**NE**	**310**	**4700**	**1800**	**270**	**21**	**16**	**59**
Lead	mg/kg	**NE**	**270**	**800**	**2200**	**10**	**12**	**14**	**17**
Mercury	mg/kg	**NE**	**1.1**	**4.6**	**7.8**	**0.17**	**0.19**	**0.15**	**0.24**
Nickel	mg/kg	**NE**	**50.9**	**2200**	**13**	**18**	**23**	**24**	**21**
Selenium	mg/kg	**NE**	**5.2**	**580**	**8.2**	<2.3	<3.0	<2.0	<2.8
Silver	mg/kg	**NE**	**1.6**	**580**	**15**	<2.3	<3.0	<2.0	<2.8
Thallium	mg/kg	**NE**	**0.078**	**1.2**	**3.0**	<1.8	<2.4	<1.6	<2.2
Zinc	mg/kg	**NE**	**746**	**35000**	**2100**	**620**	**61**	**1700**	**1700**
Chromium VI EPA 7196A									
Chromium VI	mg/kg	**NE**	**0.134**	**63**	NA	NA	NA	NA	<0.97
TCLP RCRA Metals EPA 3010A/6020A									
Arsenic	ug/L	**NE**	**NE**	**NE**	**1.4**	NA	NA	NA	NA
Lead	ug/L	**NE**	**NE**	**NE**	**7.8**	NA	NA	NA	NA

NOTES:
(0.5-1.5) = designates depth sample was collected below ground surface
TPH = total petroleum hydrocarbons
TPH-DRO = diesel range TPH
TPH-GRO = gasoline range TPH
TCL = Target Compound List
VOCs = volatile organic compounds
SVOCs = semi-VOCs
PCBs = polychlorinated biphenyls
PPL = Priority Pollutant List
TCLP = Toxic Characteristic Leaching Procedure
RCRA = Resource Conservation and Recovery Act
EPA 8260B = United States Environmental Protection Agency SW-846 analytical method
ug/kg = micrograms per kilogram
mg/kg = milligrams per kilogram
ug/L = micrograms per liter
NA = not analyzed
VDEQ = Commonwealth of Virginia Department of Environmental Quality
VDEQ-PSS = VDEQ petroleum saturated soil standard
VDEQ-T2RSL = VDEQ Tier II residential screening level
VDEQ-T3ISL = VDEQ Tier III industrial screening level
Bold and right justification designates target compound was detected at a concentration above RL
* = total chromium (chromium III and VI)
Yellow highlighting designates target compound was detected at a concentration above a VDEQ screening concentration in at least 1 sample

TABLE 4C. 2014 GEOTECHNICAL INVESTIGATION SOIL ANALYTICAL RESULTS

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

Sample ID:	Units	VDEQ-T2RSL	VDEQ-T3ISL	ECS-B7(2.5-10)	ECS-B8(2.5-4)	ECS-B9(2.5-10)	ECS-B10(4-10)	ECS-B11(5-10)	ECS-B12(5-10)
Date:				10/6/14	10/7/14	10/7/14	10/8/14	10/10/14	10/8/14
RCRA Metals EPA 6020A									
Arsenic	mg/kg	**3.5**	**30**	**1600**	**1900**	**11**	**6.8**	**18**	**7.7**
Barium	mg/kg	**1500**	**22000**	**320**	**190**	**81**	**170**	**140**	**81**
Cadmium	mg/kg	**7.1**	**98**	**17**	**12**	<2.7	<2.6	<2.7	<2.9
Chromium	mg/kg	**3600000***	**NE***	**27**	**20**	**21**	**5.4**	**15**	**3.4**
Lead	mg/kg	**270**	**800**	**1500**	**370**	**15**	**59**	**600**	**160**
Mercury	mg/kg	**1.1**	**4.6**	**27**	**20**	<0.11	**0.18**	**0.23**	**0.27**
Selenium	mg/kg	**5.2**	**580**	**10**	**6.0**	<2.7	<2.6	**3.2**	<2.9
Silver	mg/kg	**1.6**	**580**	**12**	**2.8**	<2.7	<2.6	**5.9**	<2.9
TCLP RCRA Metals EPA 3010A/6020A									
Arsenic	ug/L	**NE**	**NE**	**2.0**	**6.3**	NA	NA	NA	NA
Barium	ug/L	**NE**	**NE**	<1.0	**1.0**	NA	NA	NA	NA
Cadmium	ug/L	**NE**	**NE**	**0.063**	**0.070**	NA	NA	NA	NA
Chromium	ug/L	**NE**	**NE**	<0.050	<0.050	NA	NA	NA	NA
Lead	ug/L	**NE**	**NE**	**0.75**	<0.050	NA	NA	NA	NA
Mercury	ug/L	**NE**	**NE**	<0.0020	<0.0020	NA	NA	NA	NA
Selenium	ug/L	**NE**	**NE**	<0.050	<0.050	NA	NA	NA	NA
Silver	ug/L	**NE**	**NE**	<0.050	<0.050	NA	NA	NA	NA

NOTES:
(2.5-4) = designates depth sample was collected below ground surface
TCLP = Toxic Characteristic Leaching Procedure
RCRA = Resource Conservation and Recovery Act
EPA 6020A = United States Environmental Protection Agency SW-846 analytical method
mg/kg = milligrams per kilogram
ug/L = micrograms per liter
NA = not analyzed
VDEQ = Commonwealth of Virginia Department of Environmental Quality
VDEQ-PSS = VDEQ petroleum saturated soil standard
VDEQ-T2RSL = VDEQ Tier II residential screening level
VDEQ-T3ISL = VDEQ Tier III industrial screening level
Bold and right justification designates target compound was detected at a concentration above RL
* = total chromium (chromium III and VI)
Yellow highlighting designates target compound was detected at a concentration above a VDEQ screening concentration in at least 1 sample

TABLE 4D. 2016 ICOR SOIL ANALYTICAL RESULTS (DETECTIONS ONLY)

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

Sample ID:	Units	VDEQ-PSSS	VDEQ-T2RSL	VDEQ-T3ISL	ECS-B7(1-2)	ECS-B7(5-6)	ICOR-SB3(10.5-11.5)	ICOR-SB9(4-5)	ICOR-SB14(1-2)	ICOR-SB14(4-5)	ICOR-SB15(1-2)	MiHpt-03(1-2)	MiHpt-03(4-5)	MiHpt-04(1-2)	MiHpt-04(4-5)	MiHpt-05(1-2)	MiHpt-06(1-2)	MiHpt-06(4-5)	MiHpt-07(1-2)	MiHpt-07(7-8)	MiHpt-08(4-5)	MiHpt-08(37.8-38.8)
Sample Date:					9/7/16	9/7/16	9/7/16	9/7/16	9/7/16	9/7/16	9/7/16	9/6/16	9/6/16	9/6/16	9/6/16	9/7/16	9/6/16	9/6/16	9/6/16	9/6/16	9/6/16	9/6/16
TPH 8015																						
TPH-GRO (C6-C10)	mg/kg	**8300**	**NE**	**NE**	NA	<0.12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1300**	**0.260**	**0.160**
TPH-DRO (C10-C28)	mg/kg	**11000**	**NE**	**NE**	NA	**100**	**13**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**59**	<12	<15	
TCL VOCs 8260B																						
Acetone	ug/kg	**NE**	**574000**	**67000000**	NA	<23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1900	<17	**66**
Cyclohexane	ug/kg	**NE**	**26600**	**2700000**	NA	<23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1900	<17	<27
Ethylbenzene	ug/kg	**NE**	**15700**	**250000**	NA	<5.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<460	<4.3	<6.8
Isopropylbenzene	ug/kg	**NE**	**1470**	**990000**	NA	<5.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<460	<4.3	<6.8
Methylcyclohexane	ug/kg	**NE**	**NE**	**NE**	NA	<23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1900	<17	<27
Naphthalene	ug/kg	**NE**	**40.1**	**59000**	NA	**260**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<460	<4.3	<6.8
Tetrachloroethene	ug/kg	**NE**	**45.3**	**39000**	NA	<5.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<460	<4.3	<6.8
Toluene	ug/kg	**NE**	**13800**	**4700000**	NA	<5.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<460	<4.3	<6.8
m,p-Xylenes	ug/kg	**NE**	**371**	**240000**	NA	<11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<930	<8.6	<14
o-Xylene	ug/kg	**NE**	**374**	**280000**	NA	<5.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<460	<4.3	<6.8
TCL SVOCs 8270C																						
2-Methylnaphthalene	ug/kg	**NE**	**371**	**300000**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<250
Acenaphthene	ug/kg	**NE**	**10900**	**4500000**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<250
Anthracene	ug/kg	**NE**	**119000**	**23000000**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<250
Benzo(a)anthracene	ug/kg	**NE**	**2120**	**210000**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<250
Benzo(a)pyrene	ug/kg	**NE**	**1100**	**21000**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<250
Benzo(b)fluoranthene	ug/kg	**NE**	**11000**	**210000**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<250
Benzo(g,h,i)perylene	ug/kg	**NE**	**26100**	**2300000**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<250
Benzo(k)fluoranthene	ug/kg	**NE**	**110000**	**2100000**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<250
Chrysene	ug/kg	**NE**	**1100000**	**21000000**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<250
Dibenz(a,h)Anthracene	ug/kg	**NE**	**1100**	**21000**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<250
Dibenzofuran	ug/kg	**NE**	**293**	**100000**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<250
Fluoranthene	ug/kg	**NE**	**178000**	**3000000**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<250
Fluorene	ug/kg	**NE**	**10700**	**3000000**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<250
Indeno(1,2,3-c,d)Pyrene	ug/kg	**NE**	**11000**	**210000**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<250
Naphthalene	ug/kg	**NE**	**40.1**	**59000**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<250
Phenanthrene	ug/kg	**NE**	**26100**	**2300000**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<250
Pyrene	ug/kg	**NE**	**26100**	**2300000**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<250
PCBs 8082																						
PCBs	mg/kg				<0.055	NA	<0.060	<0.058	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides 8081B																						
4,4-DDD	ug/kg	**NE**	**29.6**	**2500**	**6.1**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4-DDE	ug/kg	**NE**	**2160**	**35000**	**15**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4-DDT	ug/kg	**NE**	**3700**	**52000**	**7.0**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Herbicides 8151A																						
2,4,5-T	ug/kg	**NE**	**NE**	**NE**	<22	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dioxins 8290A																						
2,3,7,8-TCDD	ng/kg	**NE**	**NE**	**NE**	NA	NA	NA	NA	NA	NA	**0.0670** JQ	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PPL Metals 6020A																						
Antimony	mg/kg	**NE**	**3.1**	**47**	<2.5	NA	NA	NA	NA	NA	NA	<2.6	NA	<2.0	NA	NA	<2.5	**17**	NA	NA	NA	NA
Arsenic	mg/kg	**NE**	**3.5**	**30**	**49**	NA	NA	NA	**9.1**	**9.2**	NA	**1.1**	**190**	**3.9**	**320**	**2.2**	**1.2**	**150**	**1.0**	NA	NA	NA
Cadmium	mg/kg	**NE**	**7.1**	**98**	<2.5	NA	NA	NA	NA	NA	NA	<2.6	NA	<2.0	NA	NA	<2.5	<2.5	NA	NA	NA	NA
Chromium	mg/kg	**NE**	**3600000***	**NE***	**17**	NA	NA	NA	NA	NA	NA	**5.5**	NA	**4.0**	NA	NA	**8.1**	**11**	NA	NA	NA	NA
Copper	mg/kg	**NE**	**310**	**4700**	**39**	NA	NA	NA	NA	NA	NA	**4.2**	NA	**6.7**	NA	NA	**6.0**	**410**	NA	NA	NA	NA
Lead	mg/kg	**NE**	**270**	**800**	**160**	NA	NA	NA	NA	NA	NA	**22**	NA	**94**	NA	NA	**6.7**	**1800**	NA	NA	NA	NA
Mercury	mg/kg	**NE**	**1.1**	**4.6**	**1.3**	NA	NA	NA	NA	NA	NA	<0.10	NA	**0.094**	NA	NA	**0.12**	**0.47**	NA	NA	NA	NA
Nickel	mg/kg	**NE**	**50.9**	**2200**	**14**	NA	NA	NA	NA	NA	NA	<2.6	NA	<2.0	NA	NA	**3.2**	**6.5**	NA	NA	NA	NA
Selenium	mg/kg	**NE**	**5.2**	**580**	<2.5	NA	NA	NA	NA	NA	NA	<2.6	NA	<2.0	NA	NA	<2.5	**6.3**	NA	NA	NA	NA
Silver	mg/kg	**NE**	**1.6**	**580**	<2.5	NA	NA	NA	NA	NA	NA	<2.6	NA	<2.0	NA	NA	<2.5	**3.3**	NA	NA	NA	NA
Thallium	mg/kg	**NE**	**0.078**	**1.2**	<2.0	NA	NA	NA	NA	NA	NA	<2.1	NA	<1.6	NA	NA	<2.0	**2.4**	NA	NA	NA	NA
Zinc	mg/kg	**NE**	**746**	**35000**	**130**	NA	NA	NA	NA	NA	NA	<10	NA	**16**	NA	NA	**15**	**370**	NA	NA	NA	NA

NOTES:
(0.5-1.5) = designates depth sample was collected below ground surface
TPH = total petroleum hydrocarbons
TPH-DRO = diesel range TPH
TPH-GRO = gasoline range TPH
TCL = Target Compound List
VOCs = volatile organic compounds
SVOCs = semi-VOCs
PCBs = polychlorinated biphenyls
PPL = Priority Pollutant List
EPA 8260B = United States Environmental Protection Agency SW-846 analytical method
ng/kg = nanograms per kilogram
ug/kg = micrograms per kilogram
mg/kg = milligrams per kilogram
NA = not analyzed
<1.0 = not detected above analytical method reporting limit (RL)
VDEQ = Commonwealth of Virginia Department of Environmental Quality
VDEQ-PSS = VDEQ petroleum saturated soil standard
VDEQ-T2RSL = VDEQ Tier II residential screening level
VDEQ-T3ISL = VDEQ Tier III industrial screening level
Bold and right justification designates target compound was detected at a concentration above RL
* = total chromium (chromium III and VI)
Yellow highlighting designates target compound was detected at a concentration above a VDEQ screening concentration in at least 1 sample

TABLE 4D. 2016 ICOR SOIL ANALYTICAL RESULTS (DETECTIONS ONLY)

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

Sample ID:	Units	VDEQ-PSSS	VDEQ-T2RSL	VDEQ-T3ISL	MiHpt-10(24.5-25.5)	MiHpt-12(1-2)	MiHpt-13(1-2)	MiHpt-13(4-5)	MiHpt-14(1-2)	MiHpt-14(4-5)	MiHpt-14(5-6)	MiHpt-14(25-26)	MiHpt-15(1-2)	MiHpt-15(4-5)	MiHpt-16(1-2)	MiHpt-16(4-5)	MiHpt-16(8-9)	MiHpt-17(1-2)	MiHpt-17(4-5)	MiHpt-18(1-2)	MiHpt-19(1-2)	MiHpt-19(4-5)
Sample Date:					9/6/16	9/7/16	9/7/16	9/7/16	9/8/16	9/8/16	9/8/16	9/8/16	9/8/16	9/8/16	9/8/16	9/8/16	9/8/16	9/7/16	9/7/16	9/7/16	9/7/16	9/7/16
TPH 8015																						
TPH-GRO (C6-C10)	mg/kg	**8300**	**NE**	**NE**	**0.180**	NA	NA	NA	NA	NA	NA	<0.11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH-DRO (C10-C28)	mg/kg	**11000**	**NE**	**NE**	**150**	NA	NA	NA	NA	NA	NA	<12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TCL VOCs 8260B																						
Acetone	ug/kg	**NE**	**574000**	**67000000**	**84**	NA	NA	NA	NA	NA	**45**	<20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	ug/kg	**NE**	**26600**	**2700000**	<27	NA	NA	NA	NA	NA	<19	<20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	ug/kg	**NE**	**15700**	**250000**	<6.9	NA	NA	NA	NA	NA	<4.7	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	ug/kg	**NE**	**1470**	**990000**	<6.9	NA	NA	NA	NA	NA	<4.7	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	ug/kg	**NE**	**NE**	**NE**	<27	NA	NA	NA	NA	NA	<19	<20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	ug/kg	**NE**	**40.1**	**59000**	**10**	NA	NA	NA	NA	NA	<4.7	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	ug/kg	**NE**	**45.3**	**39000**	<6.9	NA	NA	NA	NA	NA	<4.7	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	ug/kg	**NE**	**13800**	**4700000**	<6.9	NA	NA	NA	NA	NA	<4.7	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylenes	ug/kg	**NE**	**371**	**240000**	<14	NA	NA	NA	NA	NA	<9.5	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	ug/kg	**NE**	**374**	**280000**	<6.9	NA	NA	NA	NA	NA	<4.7	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TCL SVOCs 8270C																						
2-Methylnaphthalene	ug/kg	**NE**	**371**	**300000**	**560**	NA	NA	NA	NA	NA	NA	<190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	ug/kg	**NE**	**10900**	**4500000**	**2300**	NA	NA	NA	NA	NA	NA	<190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	ug/kg	**NE**	**119000**	**23000000**	**3400**	NA	NA	NA	NA	NA	NA	<190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	ug/kg	**NE**	**2120**	**210000**	**5500**	NA	NA	NA	NA	NA	NA	<190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	ug/kg	**NE**	**1100**	**21000**	**5200**	NA	NA	NA	NA	NA	NA	<190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	ug/kg	**NE**	**11000**	**210000**	**3800**	NA	NA	NA	NA	NA	NA	<190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	ug/kg	**NE**	**26100**	**2300000**	**2700**	NA	NA	NA	NA	NA	NA	<190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	ug/kg	**NE**	**110000**	**2100000**	**3500**	NA	NA	NA	NA	NA	NA	<190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	ug/kg	**NE**	**1100000**	**21000000**	**4800**	NA	NA	NA	NA	NA	NA	<190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)Anthracene	ug/kg	**NE**	**1100**	**21000**	**1200**	NA	NA	NA	NA	NA	NA	<190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	ug/kg	**NE**	**293**	**100000**	**1200**	NA	NA	NA	NA	NA	NA	<190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	ug/kg	**NE**	**178000**	**3000000**	**8700**	NA	NA	NA	NA	NA	NA	<190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	ug/kg	**NE**	**10700**	**3000000**	**2200**	NA	NA	NA	NA	NA	NA	<190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-c,d)Pyrene	ug/kg	**NE**	**11000**	**210000**	**3100**	NA	NA	NA	NA	NA	NA	<190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	ug/kg	**NE**	**40.1**	**59000**	**570**	NA	NA	NA	NA	NA	NA	<190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	ug/kg	**NE**	**26100**	**2300000**	**8200**	NA	NA	NA	NA	NA	NA	<190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	ug/kg	**NE**	**26100**	**2300000**	**7400**	NA	NA	NA	NA	NA	NA	<190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs 8082																						
PCBs	mg/kg				NA	NA	NA	NA	<0.056	NA	NA	NA	NA	NA	<0.059	<0.061	NA	NA	NA	NA	NA	NA
Pesticides 8081B																						
4,4-DDD	ug/kg	**NE**	**29.6**	**2500**	NA	NA	NA	NA	<4.5	NA	NA	NA	NA	NA	<4.7	<4.9	NA	NA	NA	NA	NA	NA
4,4-DDE	ug/kg	**NE**	**2160**	**35000**	NA	NA	NA	NA	<4.5	NA	NA	NA	NA	NA	<4.7	<4.9	NA	NA	NA	NA	NA	NA
4,4-DDT	ug/kg	**NE**	**3700**	**52000**	NA	NA	NA	NA	<4.5	NA	NA	NA	NA	NA	<4.7	<4.9	NA	NA	NA	NA	NA	NA
Herbicides 8151A																						
2,4,5-T	ug/kg	**NE**	**NE**	**NE**	NA	NA	NA	NA	<22	NA	NA	NA	NA	NA	<25	<25	NA	NA	NA	NA	NA	NA
Dioxins 8290A																						
2,3,7,8-TCDD	ng/kg	**NE**	**NE**	**NE**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.115** J	NA	NA	NA	NA	NA	**12.4**	NA
PPL Metals 6020A																						
Antimony	mg/kg	**NE**	**3.1**	**47**	NA	NA	**12**	NA	**18**	NA	NA	NA	<2.7	NA	NA	NA	NA	**14**	NA	NA	NA	NA
Arsenic	mg/kg	**NE**	**3.5**	**30**	NA	**400**	**810**	**32**	**730**	**93**	NA	NA	**9.6**	**1800**	NA	NA	**6.6**	**670**	**6.9**	**12**	**130**	**480**
Cadmium	mg/kg	**NE**	**7.1**	**98**	NA	NA	**17**	NA	**7.7**	NA	NA	NA	<2.7	NA	NA	NA	NA	**12**	NA	NA	NA	NA
Chromium	mg/kg	**NE**	**3600000***	**NE***	NA	NA	**29**	NA	**16**	NA	NA	NA	**15**	NA	NA	NA	NA	**27**	NA	NA	NA	NA
Copper	mg/kg	**NE**	**310**	**4700**	NA	NA	**11000**	NA	**780**	NA	NA	NA	**35**	NA	NA	NA	NA	**6900**	NA	NA	NA	NA
Lead	mg/kg	**NE**	**270**	**800**	NA	NA	**1800**	NA	**380**	NA	NA	NA	**100**	NA	NA	NA	NA	**1500**	NA	NA	NA	NA
Mercury	mg/kg	**NE**	**1.1**	**4.6**	NA	NA	**26**	NA	**18**	NA	NA	NA	**0.61**	NA	NA	NA	NA	**20**	NA	NA	NA	NA
Nickel	mg/kg	**NE**	**50.9**	**2200**	NA	NA	**18**	NA	**12**	NA	NA	NA	**12**	NA	NA	NA	NA	**16**	NA	NA	NA	NA
Selenium	mg/kg	**NE**	**5.2**	**580**	NA	NA	**11**	NA	**5.0**	NA	NA	NA	<2.7	NA	NA	NA	NA	**12**	NA	NA	NA	NA
Silver	mg/kg	**NE**	**1.6**	**580**	NA	NA	**16**	NA	**2.3**	NA	NA	NA	<2.7	NA	NA	NA	NA	**16**	NA	NA	NA	NA
Thallium	mg/kg	**NE**	**0.078**	**1.2**	NA	NA	**6.5**	NA	**5.6**	NA	NA	NA	<2.2	NA	NA	NA	NA	<21	NA	NA	NA	NA
Zinc	mg/kg	**NE**	**746**	**35000**	NA	NA	**7200**	NA	**1300**	NA	NA	NA	**83**	NA	NA	NA	NA	**4300**	NA	NA	NA	NA

NOTES:
(0.5-1.5) = designates depth sample was collected below ground surface
TPH = total petroleum hydrocarbons
TPH-DRO = diesel range TPH
TPH-GRO = gasoline range TPH
TCL = Target Compound List
VOCs = volatile organic compounds
SVOCs = semi-VOCs
PCBs = polychlorinated biphenyls
PPL = Priority Pollutant List
EPA 8260B = United States Environmental Protection Agency SW-846 analytical method
ng/kg = nanograms per kilogram
ug/kg = micrograms per kilogram
mg/kg = milligrams per kilogram
NA = not analyzed
<1.0 = not detected above analytical method reporting limit (RL)
VDEQ = Commonwealth of Virginia Department of Environmental Quality
VDEQ-PSS = VDEQ petroleum saturated soil standard
VDEQ-T2RSL = VDEQ Tier II residential screening level
VDEQ-T3ISL = VDEQ Tier III industrial screening level
Bold and right justification designates target compound was detected at a concentration above RL
* = total chromium (chromium III and VI)
Yellow highlighting designates target compound was detected at a concentration above a VDEQ screening concentration in at least 1 sample

TABLE 4D. 2016 ICOR SOIL ANALYTICAL RESULTS (DETECTIONS ONLY)

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

Sample ID:	Units	VDEQ-PSSS	VDEQ-T2RSL	VDEQ-T3ISL	MiHpt-20(1.5-2.5)	MiHpt-20(4-5)	MiHpt-21(1-2)	MiHpt-21(4.5-5.5)	MiHpt-21(9-10)	MiHpt-21(24-25)	MiHpt-22(1-2)	MiHpt-22(4.5-5.5)	MiHpt-22(19-20)	MiHpt-22(24-25)
Sample Date:					9/8/16	9/8/16	9/9/16	9/9/16	9/9/16	9/9/16	9/9/16	9/9/16	9/9/16	9/9/16
TPH 8015														
TPH-GRO (C6-C10)	mg/kg	**8300**	**NE**	**NE**	NA	NA	NA	NA	**760**	<0.12	NA	NA	**2.5**	<0.12
TPH-DRO (C10-C28)	mg/kg	**11000**	**NE**	**NE**	NA	NA	NA	NA	**49**	<12	NA	NA	**71**	<12
TCL VOCs 8260B														
Acetone	ug/kg	**NE**	**574000**	**67000000**	NA	NA	NA	NA	<1900	<21	NA	NA	<24000	<22
Cyclohexane	ug/kg	**NE**	**26600**	**2700000**	NA	NA	NA	NA	**190000**	<21	NA	NA	**35000**	<22
Ethylbenzene	ug/kg	**NE**	**15700**	**250000**	NA	NA	NA	NA	**8500**	<5.2	NA	NA	**15000**	<5.5
Isopropylbenzene	ug/kg	**NE**	**1470**	**990000**	NA	NA	NA	NA	**1900**	<5.2	NA	NA	<6000	<5.5
Methylcyclohexane	ug/kg	**NE**	**NE**	**NE**	NA	NA	NA	NA	**400000**	<21	NA	NA	**200000**	<22
Naphthalene	ug/kg	**NE**	**40.1**	**59000**	NA	NA	NA	NA	<490	<5.2	NA	NA	**46000**	<5.5
Tetrachloroethene	ug/kg	**NE**	**45.3**	**39000**	NA	NA	NA	NA	**3800**	<5.2	NA	NA	<6000	<5.5
Toluene	ug/kg	**NE**	**13800**	**4700000**	NA	NA	NA	NA	**990**	<5.2	NA	NA	<6000	<5.5
m,p-Xylenes	ug/kg	**NE**	**371**	**240000**	NA	NA	NA	NA	**14000**	<10	NA	NA	**18000**	<11
o-Xylene	ug/kg	**NE**	**374**	**280000**	NA	NA	NA	NA	**700**	<5.2	NA	NA	**7300**	<5.5
TCL SVOCs 8270C														
2-Methylnaphthalene	ug/kg	**NE**	**371**	**300000**	NA	NA	NA	NA	NA	<200	NA	NA	NA	<210
Acenaphthene	ug/kg	**NE**	**10900**	**4500000**	NA	NA	NA	NA	NA	<200	NA	NA	NA	<210
Anthracene	ug/kg	**NE**	**119000**	**23000000**	NA	NA	NA	NA	NA	<200	NA	NA	NA	<210
Benzo(a)anthracene	ug/kg	**NE**	**2120**	**210000**	NA	NA	NA	NA	NA	<200	NA	NA	NA	<210
Benzo(a)pyrene	ug/kg	**NE**	**1100**	**21000**	NA	NA	NA	NA	NA	<200	NA	NA	NA	<210
Benzo(b)fluoranthene	ug/kg	**NE**	**11000**	**210000**	NA	NA	NA	NA	NA	<200	NA	NA	NA	<210
Benzo(g,h,i)perylene	ug/kg	**NE**	**26100**	**2300000**	NA	NA	NA	NA	NA	<200	NA	NA	NA	<210
Benzo(k)fluoranthene	ug/kg	**NE**	**110000**	**2100000**	NA	NA	NA	NA	NA	<200	NA	NA	NA	<210
Chrysene	ug/kg	**NE**	**1100000**	**21000000**	NA	NA	NA	NA	NA	<200	NA	NA	NA	<210
Dibenz(a,h)Anthracene	ug/kg	**NE**	**1100**	**21000**	NA	NA	NA	NA	NA	<200	NA	NA	NA	<210
Dibenzofuran	ug/kg	**NE**	**293**	**100000**	NA	NA	NA	NA	NA	<200	NA	NA	NA	<210
Fluoranthene	ug/kg	**NE**	**178000**	**3000000**	NA	NA	NA	NA	NA	<200	NA	NA	NA	<210
Fluorene	ug/kg	**NE**	**10700**	**3000000**	NA	NA	NA	NA	NA	<200	NA	NA	NA	<210
Indeno(1,2,3-c,d)Pyrene	ug/kg	**NE**	**11000**	**210000**	NA	NA	NA	NA	NA	<200	NA	NA	NA	<210
Naphthalene	ug/kg	**NE**	**40.1**	**59000**	NA	NA	NA	NA	NA	<200	NA	NA	NA	<210
Phenanthrene	ug/kg	**NE**	**26100**	**2300000**	NA	NA	NA	NA	NA	<200	NA	NA	NA	<210
Pyrene	ug/kg	**NE**	**26100**	**2300000**	NA	NA	NA	NA	NA	<200	NA	NA	NA	<210
PCBs 8082														
PCBs	mg/kg				<0.062	NA	<0.061	<0.060	NA	NA	<0.061	<0.059	NA	NA
Pesticides 8081B														
4,4-DDD	ug/kg	**NE**	**29.6**	**2500**	<5.0	NA	<4.9	<4.8	NA	NA	<4.9	<4.7	NA	NA
4,4-DDE	ug/kg	**NE**	**2160**	**35000**	<5.0	NA	<4.9	<4.8	NA	NA	<4.9	<4.7	NA	NA
4,4-DDT	ug/kg	**NE**	**3700**	**52000**	<5.0	NA	<4.9	<4.8	NA	NA	<4.9	<4.7	NA	NA
Herbicides 8151A														
2,4,5-T	ug/kg	**NE**	**NE**	**NE**	<26	NA	**52**	**42**	NA	NA	<24	<23	NA	NA
Dioxins 8290A														
2,3,7,8-TCDD	ng/kg	**NE**	**NE**	**NE**	**0.691** J	NA	NA	NA	NA	NA	NA	NA	NA	NA
PPL Metals 6020A														
Antimony	mg/kg	**NE**	**3.1**	**47**	**13**	NA	NA	NA	NA	NA	<2.6	NA	NA	NA
Arsenic	mg/kg	**NE**	**3.5**	**30**	**480**	**5.8**	NA	**7.7**	NA	NA	**2500**	**810**	NA	NA
Cadmium	mg/kg	**NE**	**7.1**	**98**	**5.9**	NA	NA	NA	NA	NA	<2.6	NA	NA	NA
Chromium	mg/kg	**NE**	**3600000***	**NE***	**21**	NA	NA	NA	NA	NA	**22**	NA	NA	NA
Copper	mg/kg	**NE**	**310**	**4700**	**1400**	NA	NA	NA	NA	NA	**25**	NA	NA	NA
Lead	mg/kg	**NE**	**270**	**800**	**690**	NA	NA	NA	NA	NA	**69**	NA	NA	NA
Mercury	mg/kg	**NE**	**1.1**	**4.6**	**3.5**	NA	NA	NA	NA	NA	**0.26**	NA	NA	NA
Nickel	mg/kg	**NE**	**50.9**	**2200**	**14**	NA	NA	NA	NA	NA	**22**	NA	NA	NA
Selenium	mg/kg	**NE**	**5.2**	**580**	**4.4**	NA	NA	NA	NA	NA	<2.6	NA	NA	NA
Silver	mg/kg	**NE**	**1.6**	**580**	**4.5**	NA	NA	NA	NA	NA	<2.6	NA	NA	NA
Thallium	mg/kg	**NE**	**0.078**	**1.2**	<2.1	NA	NA	NA	NA	NA	<2.1	NA	NA	NA
Zinc	mg/kg	**NE**	**746**	**35000**	**2700**	NA	NA	NA	NA	NA	**79**	NA	NA	NA

NOTES:
(0.5-1.5) = designates depth sample was collected below ground surface
TPH = total petroleum hydrocarbons
TPH-DRO = diesel range TPH
TPH-GRO = gasoline range TPH
TCL = Target Compound List
VOCs = volatile organic compounds
SVOCs = semi-VOCs
PCBs = polychlorinated biphenyls
PPL = Priority Pollutant List
EPA 8260B = United States Environmental Protection Agency SW-846 analytical method
ng/kg = nanograms per kilogram
ug/kg = micrograms per kilogram
mg/kg = milligrams per kilogram
NA = not analyzed
<1.0 = not detected above analytical method reporting limit (RL)
VDEQ = Commonwealth of Virginia Department of Environmental Quality
VDEQ-PSS = VDEQ petroleum saturated soil standard
VDEQ-T2RSL = VDEQ Tier II residential screening level
VDEQ-T3ISL = VDEQ Tier III industrial screening level
Bold and right justification designates target compound was detected at a concentration above RL
* = total chromium (chromium III and VI)
Yellow highlighting designates target compound was detected at a concentration above a VDEQ screening concentration in at least 1 sample

TABLE 4E. ICOR 2018 SOIL ANALYTICAL RESULTS (DETECTIONS ONLY)

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

Sample ID:	Units	VDEQ-PSSS	VDEQ-T2RSL	VDEQ-T3ISL	MW-23(11.5-12.5)	MW-24(8-9)	MW-25(9-10)
Sample Date:					1/22/18	1/22/18	1/22/18
TPH 8015							
TPH-GRO (C6-C10)	mg/kg	**8300**	**NE**	**NE**	**3.2**	<0.11	<0.12
TPH-DRO (C10-C28)	mg/kg	**11000**	**NE**	**NE**	**9000**	**58**	**220**
TCL VOCs 8260B							
Acetone	ug/kg	**NE**	**574000**	**67000000**	<3000	**34**	<25
Naphthalene	ug/kg	**NE**	**40.1**	**59000**	**9700**	<4.7	<6.2
TCL SVOCs 8270C							
2-Methylnaphthalene	ug/kg	**NE**	**371**	**300000**	**16000**	<20	<110
Acenaphthene	ug/kg	**NE**	**10900**	**4500000**	**850000**	**35**	<110
Acenaphthylene	ug/kg	**NE**	**26100**	**2300000**	**52000**	**57**	<110
Anthracene	ug/kg	**NE**	**119000**	**23000000**	**780000**	**100**	<110
Benzo(a)anthracene	ug/kg	**NE**	**2120**	**210000**	**680000**	**430**	<110
Benzo(a)pyrene	ug/kg	**NE**	**1100**	**21000**	**570000**	**450**	<110
Benzo(b)fluoranthene	ug/kg	**NE**	**11000**	**210000**	**390000**	**400**	<110
Benzo(g,h,i)perylene	ug/kg	**NE**	**26100**	**2300000**	**190000**	**220**	<110
Benzo(k)fluoranthene	ug/kg	**NE**	**110000**	**2100000**	**420000**	**320**	<110
Biphenyl (Diphenyl)	ug/kg	**NE**	**17.4**	**20000**	**160000**	<200	<1100
Carbazole	ug/kg	**NE**	**NE**	**NE**	**180000**	<200	<1100
Chrysene	ug/kg	**NE**	**1100000**	**21000000**	**530000**	**440**	<110
Dibenz(a,h)Anthracene	ug/kg	**NE**	**1100**	**21000**	**130000**	**80**	<110
Dibenzofuran	ug/kg	**NE**	**293**	**100000**	**600000**	<200	<1100
Fluoranthene	ug/kg	**NE**	**178000**	**3000000**	**1600000**	**720**	**190**
Fluorene	ug/kg	**NE**	**10700**	**3000000**	**800000**	**43**	<110
Indeno(1,2,3-c,d)Pyrene	ug/kg	**NE**	**11000**	**210000**	**280000**	**280**	<110
Naphthalene	ug/kg	**NE**	**40.1**	**59000**	**62000**	<20	<110
Phenanthrene	ug/kg	**NE**	**26100**	**2300000**	**2100000**	**400**	**130**
Pyrene	ug/kg	**NE**	**26100**	**2300000**	**1300000**	**660**	**190**

NOTES:
(11.5-12.5) = designates depth sample was collected below ground surface
TPH = total petroleum hydrocarbons
TPH-DRO = diesel range TPH
TPH-GRO = gasoline range TPH
TCL = Target Compound List
VOCs = volatile organic compounds
SVOCs = semi-VOCs
EPA 8260B = United States Environmental Protection Agency SW-846 analytical method
ug/kg = micrograms per kilogram
mg/kg = milligrams per kilogram
<1.0 = not detected above analytical method reporting limit (RL)
VDEQ-PSS = Commonwealth of Virginia Department of Environmental Quality (VDEQ) petroleum saturated soil standard
VDEQ-T2RSL = VDEQ Tier II residential screening level
VDEQ-T3ISL = VDEQ Tier III industrial screening level
NE = not established
Bold and right justification designates target compound was detected at a concentration above RL
Yellow highlighting designates target compound was detected at a concentration above a VDEQ screening concentration in at least 1 sample

TABLE 5A. TEC GROUNDWATER ANALYTICAL RESULTS

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

Sample ID:	Units	VDEQ-T3RGSL	VDEQ-T3IGSL	VDEQ-T3CDSL	VDEQ-PDS	VDEQ-T2PWSSL	VDEQ-T2SWFSL	TEC-MW1	TEC-MW2	TEC-MW3	TEC-MW4	TEC-MW5	TEC-MW6	TEC-MW7
Date:								5/1/06	5/1/06	5/1/06	5/1/06	5/1/06	5/1/06	5/1/06
TPH														
TPH-GRO	mg/L	**NE**	**NE**	**NE**	**15**	**NE**	**NE**	ND	ND	ND	ND	ND	ND	ND
TPH-DRO	mg/L	**NE**	**NE**	**NE**	**15**	**NE**	**NE**	ND	ND	ND	ND	ND	ND	ND
VOCs														
Benzene	ug/L	**13.7**	**57.3**	**14.2**	**12**	**22**	**510**	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/L	**1920**	**8100**	**949**	**43**	**510**	**6000**	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/L	**34.1**	**152**	**591**	**4.3**	**530**	**2100**	ND	ND	ND	ND	ND	ND	ND
Total Xylenes	ug/L	**36.9**	**162**	**83.1**	**2070**	**NE**	**NE**	ND	ND	ND	ND	ND	ND	ND
Methyl-t-butyl ether	ug/L	**4580**	**19600**	**524**	**15**	**NE**	**NE**	**2**	**2**	**1**	**67**	ND	ND	ND
Naphthalene	ug/L	**17.2**	**72.3**	**0.722**	**8.9**	**NE**	**NE**	ND	ND	ND	ND	ND	ND	ND

NOTES:
TPH = total petroleum hydrocarbons
TPH-DRO = diesel range TPH
TPH-GRO = gasoline range TPH
VOCs = volatile organic compounds
ug/L = micrograms per liter
mg/L = milligrams per liter
VDEQ = Commonwealth of Virginia Department of Environmental Quality
VDEQ-T3RGSL = VDEQ Tier III residential groundwater vapor intrusion screening level
VDEQ-T3CGSL = VDEQ Tier III industrial groundwater vapor intrusion screening level
VDEQ-T3CDSL = VDEQ Tier III construction direct (<15 feet) screening level
VDEQ-PDS = general permit discharge standard for petroleum contaminated water
VDEQ-T2PWSSL = VDEQ Tier II public water supply screening level
VDEQ-T2SWFSL = VDEQ Tier II surface water fresh screening level
NE = not established
Bold and right justification designates target compound was detected at a concentration above RL
Yellow highlighting designates target compound was detected at a concentration above the VDEQ groundwater screening level in at least 1 sample
Blue highlighting designates target compound was detected at a concentration above the VDEQ surface water screening level in at least 1 sample
Green highlighting designates target compound was detected at a concentration above the VDEQ groundwater and surface water screening level in at least 1 sample

TABLE 5B. ECS GROUNDWATER ANALYTICAL RESULTS (DETECTIONS ONLY)

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

Sample ID:	Units	VDEQ-T3RGSL	VDEQ-T3IGSL	VDEQ-T3CDSL	VDEQ-PDS	VDEQ-T2PWSSL	VDEQ-T2SWFSL	ECS-MW2	ECS-MW4
Date:								1/4/08	1/4/08
TPH									
TPH-DRO	mg/L	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**2.87**	**0.99**
VOCs									
Benzene	ug/L	**13.7**	**57.3**	**14.2**	**12**	**22**	**510**	**60**	ND
Naphthalene	ug/L	**17.2**	**72.3**	**0.722**	**8.9**	**NE**	**NE**	ND	**8.6**
Total Xylenes	ug/L	**36.9**	**162**	**83.1**	**2070**	**NE**	**NE**	**3.1**	**4.2**
SVOCs									
Acenaphthene	ug/L	**NE**	**NE**	**2950**	**NE**	**670**	**990**	ND	**17**
Acenaphthylene	ug/L	**NE**	**NE**	**1430**	**NE**	**NE**	**NE**	ND	**10**
Dimethyl phthalate	ug/L	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**3.9**	ND
Fluorene	ug/L	**NE**	**NE**	**4370**	**NE**	**1100**	**5300**	ND	**5.6**
2-Methylnaphthalene	ug/L	**NE**	**NE**	**59**	**NE**	**NE**	**NE**	ND	**2.3**
Naphthalene	ug/L	**17.2**	**72.3**	**0.722**	**8.9**	**NE**	**NE**	ND	**8.3**
Phenanthrene	ug/L	**NE**	**NE**	**1430**	**NE**	**NE**	**NE**	ND	**2.2**
Total RCRA Metals									
Arsenic	mg/L	**NE**	**NE**	**0.197**	**NE**	**0.001**	**0.15**	**0.020**	**0.009**
Barium	mg/L	**NE**	**NE**	**20.2**	**NE**	**2**	**NE**	**0.129**	**0.581**
Cadmium	mg/L	**NE**	**NE**	**0.0192**	**NE**	**0.0011**	**0.0011**	**0.160**	ND
Chromium	mg/L	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**0.015**	**0.048**
Lead	mg/L	**NE**	**NE**	**NE**	**NE**	**0.011**	**0.011**	**0.044**	**0.112**
Mercury	mg/L	**0.0000881**	**0.000369**	**0.0000086**	**NE**	**0.00077**	**0.00077**	ND	ND
Selenium	mg/L	**NE**	**NE**	**3.28**	**NE**	**0.005**	**0.005**	**0.005**	**0.002**
Silver	mg/L	**NE**	**NE**	**0.0484**	**NE**	**NE**	**NE**	ND	ND

NOTES:
TPH = total petroleum hydrocarbons
TPH-DRO = diesel range TPH
VOCs = volatile organic compounds
SVOCs = semi-VOCs
RCRA = Resource Conservation and Recovery Act
ug/L = micrograms per liter
mg/L = milligrams per liter
VDEQ = Commonwealth of Virginia Department of Environmental Quality
VDEQ-T3RGSL = VDEQ Tier III residential groundwater vapor intrusion screening level
VDEQ-T3CGSL = VDEQ Tier III industrial groundwater vapor intrusion screening level
VDEQ-T3CDSL = VDEQ Tier III construction direct (<15 feet) screening level
VDEQ-PDS = general permit discharge standard for petroleum contaminated water
VDEQ-T2PWSSL = VDEQ Tier II public water supply screening level
VDEQ-T2SWFSL = VDEQ Tier II surface water fresh screening level
NE = not established
Bold and right justification designates target compound was detected at a concentration above RL
Yellow highlighting designates target compound was detected at a concentration above the VDEQ groundwater screening level in at least 1 sample
Blue highlighting designates target compound was detected at a concentration above the VDEQ surface water screening level in at least 1 sample
Green highlighting designates target compound was detected at a concentration above the VDEQ groundwater and surface water screening level in at least 1 sample

TABLE 5C. ICOR 2013 GROUNDWATER ANALYTICAL RESULTS (DETECTIONS ONLY)

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

Sample ID:	Units	VDEQ-T3RGSL	VDEQ-T3IGSL	VDEQ-T3CDSL	VDEQ-PDS	VDEQ-T2PWSSL	VDEQ-T2SWFSL	ECS-MW2	ECS-MW4	ICOR-SB1(GW)	ICOR-SB5(GW)	ICOR-SB6(GW)	ICOR-SB7(GW)	ICOR-SB8(GW)	ICOR-SB9(GW)
Date:								10/08/2013	10/08/2013	10/08/2013	10/08/2013	10/08/2013	10/08/2013	10/08/2013	10/08/2013
TPH EPA 8015															
TPH-GRO	mg/L	NE	NE	NE	15	NE	NE	2.8	<0.1	<0.1	0.25	0.21	0.18	11	0.25
TPH-DRO	mg/L	NE	NE	NE	15	NE	NE	0.91	0.15	0.17	0.30	0.11	0.16	0.93	0.77
TCL VOCs EPA 8260B															
Benzene	ug/L	13.7	57.3	14.2	12	22	510	160	<1.0	<1.0	49	50	1.7	57	7.4
Cyclohexane	ug/L	103	424	3330	NE	NE	NE	150	<10	<10	<10	<10	<10	710	<10
Ethylbenzene	ug/L	34.1	152	591	4.3	530	2100	47	<1.0	<1.0	15	7.7	<1.0	80	<1.0
Isopropylbenzene	ug/L	89.3	383	19.9	NE	NE	NE	6.7	<1.0	<1.0	3.5	<1.0	1.2	<10	<1.0
Methylcyclohexane	ug/L	NE	NE	NE	NE	NE	NE	230	<10	<10	<10	<10	<10	520	<10
Naphthalene	ug/L	17.2	72.3	0.722	8.9	NE	NE	73	<1.0	<1.0	29	27	<1.0	50	19
Toluene	ug/L	1920	8100	949	43	510	6000	5.8	<1.0	<1.0	<1.0	<1.0	<1.0	16	1.7
m,p-Xylenes	ug/L	150	1290	20.8	33	NE	NE	17	<2.0	<2.0	4.8	2.9	<2.0	76	<2.0
o-Xylene	ug/L	47.2	208	20.9	33	NE	NE	28	<1.0	<1.0	21	3.2	<1.0	<10	<1.0
TCL SVOCs EPA 8270C															
Acenaphthene	ug/L	NE	NE	2950	NE	670	990	<11	17	7.2	<5.0	<5.0	<5.0	<11	27
Acenaphthylene	ug/L	NE	NE	1430	NE	NE	NE	<11	<5.0	<5.0	<5.0	<5.0	<5.0	<11	8.5
Anthracene	ug/L	NE	NE	7850	NE	8300	40000	<11	<5.0	<5.0	<5.0	<5.0	<5.0	<11	7.3
Biphenyl (Diphenyl)	ug/L	3.34	14.3	1.18	NE	NE	NE	<11	<5.0	<5.0	<5.0	<5.0	<5.0	<11	9.3
Carbazole	ug/L	NE	NE	NE	NE	NE	NE	<11	<5.0	<5.0	<5.0	<5.0	<5.0	<11	8.7
Dibenzofuran	ug/L	NE	NE	48.4	NE	NE	NE	<11	<5.0	<5.0	<5.0	<5.0	<5.0	<11	22
Fluoranthene	ug/L	NE	NE	311	NE	130	140	<11	<5.0	<5.0	<5.0	<5.0	<5.0	<11	12
Fluorene	ug/L	NE	NE	4370	NE	1100	5300	<11	5.9	<5.0	<5.0	<5.0	<5.0	<11	30
Naphthalene	ug/L	17.2	72.3	0.722	8.9	NE	NE	36	<5.0	<5.0	<5.0	8.4	<5.0	<11	13
Phenanthrene	ug/L	NE	NE	1430	NE	NE	NE	<11	<5.0	<5.0	<5.0	<5.0	<5.0	<11	25
Pyrene	ug/L	NE	NE	1430	NE	830	4000	<11	<5.0	<5.0	<5.0	<5.0	<5.0	<11	8.7
Total PPL Metals EPA 6020A															
Antimony	ug/L	NE	NE	78.6	NE	5.6	640	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	NA	9.9
Arsenic	ug/L	NE	NE	197	NE	1	150	95	38	120	480	400	15	NA	370
Beryllium	ug/L	NE	NE	55	NE	NE	NE	26	<1.0	<1.0	60	1.8	<1.0	NA	<1.0
Cadmium	ug/L	NE	NE	19.2	NE	1.1	1.1	31	<1.0	13	32	6.7	<1.0	NA	2.5
Chromium	ug/L	NE	NE	NE	NE	NE	NE	180	<1.0	24	270	39	3.7	NA	3.5
Copper	ug/L	NE	NE	6570	NE	9	9	3300	<1.0	700	2000	790	1.4	NA	150
Lead	ug/L	NE	NE	NE	NE	11	11	1100	14	530	610	290	3.2	NA	76
Mercury	ug/L	0.0881	0.369	0.0086	NE	0.77	0.77	0.72	<0.20	0.38	0.26	<0.20	<0.20	NA	0.40
Nickel	ug/L	NE	NE	4950	NE	20	20	160	<1.0	38	1500	33	2.9	NA	6.6
Selenium	ug/L	NE	NE	3280	NE	5	5	<5.0	<1.0	3.7	5.8	7.6	<1.0	NA	<1.0
Silver	ug/L	NE	NE	48.4	NE	NE	NE	<1.0	<1.0	3.7	<1.0	<1.0	<1.0	NA	<1.0
Thallium	ug/L	NE	NE	26.3	NE	0.24	0.47	1.1	<1.0	1.0	1.0	<1.0	<1.0	NA	<1.0
Zinc	ug/L	NE	NE	236000	NE	120	120	19000	<20	6900	21000	1800	28	NA	8200
Dissolved PPL Metals EPA 6020A															
Arsenic	ug/L	NE	NE	197	NE	1	150	1.4	<1.0	14	420	38	5.0	NA	25
Beryllium	ug/L	NE	NE	55	NE	NE	NE	<1.0	<1.0	<1.0	32	<1.0	<1.0	NA	<1.0
Cadmium	ug/L	NE	NE	19.2	NE	1.1	1.1	<1.0	<1.0	6.4	39	<1.0	<1.0	NA	<1.0
Chromium	ug/L	NE	NE	NE	NE	NE	NE	<1.0	<1.0	<1.0	250	<1.0	<1.0	NA	<1.0
Copper	ug/L	NE	NE	6570	NE	9	9	<1.0	<1.0	52	1000	3.0	<1.0	NA	<1.0

TABLE 5C. ICOR 2013 GROUNDWATER ANALYTICAL RESULTS (DETECTIONS ONLY)

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

Sample ID:	Units	VDEQ-T3RGSL	VDEQ-T3IGSL	VDEQ-T3CDSL	VDEQ-PDS	VDEQ-T2PWSSL	VDEQ-T2SWFSL	ECS-MW2	ECS-MW4	ICOR-SB1(GW)	ICOR-SB5(GW)	ICOR-SB6(GW)	ICOR-SB7(GW)	ICOR-SB8(GW)	ICOR-SB9(GW)
Date:								10/08/2013	10/08/2013	10/08/2013	10/08/2013	10/08/2013	10/08/2013	10/08/2013	10/08/2013
Lead	ug/L	**NE**	**NE**	**NE**	**NE**	**11**	**11**	<1.0	<1.0	**2.9**	**820**	<1.0	<1.0	NA	<1.0
Mercury	ug/L	**0.0881**	**0.369**	**0.0086**	**NE**	**0.77**	**0.77**	<0.20	<0.20	<0.20	**0.25**	<0.20	<0.20	NA	<0.20
Nickel	ug/L	**NE**	**NE**	**4950**	**NE**	**20**	**20**	**1.5**	<1.0	**24**	**1500**	**3.8**	<1.0	NA	**3.0**
Selenium	ug/L	**NE**	**NE**	**3280**	**NE**	**5**	**5**	<1.0	<1.0	**1.7**	**4.3**	**7.2**	<1.0	NA	<1.0
Zinc	ug/L	**NE**	**NE**	**236000**	**NE**	**120**	**120**	**130**	<20	**4200**	**23000**	**530**	<20	NA	**6400**

NOTES:
TPH = total petroleum hydrocarbons
TPH-DRO = diesel range TPH
TPH-GRO = gasoline range TPH
TCL = Target Compound List
VOCs = volatile organic compounds
SVOCs = semi-VOCs
PCBs = polychlorinated biphenyls
PPL = Priority Pollutant List
EPA 8260B = United States Environmental Protection Agency SW-846 analytical method
ug/L = micrograms per liter
mg/L = milligrams per liter
<1.0 = not detected above analytical method reporting limit (RL)
VDEQ = Commonwealth of Virginia Department of Environmental Quality
VDEQ-T3RGSL = VDEQ Tier III residential groundwater vapor intrusion screening level
VDEQ-T3CGSL = VDEQ Tier III industrial groundwater vapor intrusion screening level
VDEQ-T3CDSL = VDEQ Tier III construction direct (<15 feet) screening level
VDEQ-PDS = general permit discharge standard for petroleum contaminated water
VDEQ-T2PWSSL = VDEQ Tier II public water supply screening level
VDEQ-T2SWFSL = VDEQ Tier II surface water fresh screening level
NE = not established
Bold and right justification designates target compound was detected at a concentration above RL
Yellow highlighting designates target compound was detected at a concentration above the VDEQ groundwater screening level in at least 1 sample
Blue highlighting designates target compound was detected at a concentration above the VDEQ surface water screening level in at least 1 sample
Green highlighting designates target compound was detected at a concentration above the VDEQ groundwater and surface water screening level in at least 1 sample

TABLE 5D. GROUNDWATER ANALYTICAL RESULTS (OBTAINED DURING UST REMOVAL AND INCLUDES COMPARISON TO HISTORICAL DATA)

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

Sample ID:	Units	VDEQ-T3RGSL	VDEQ-T3IGSL	VDEQ-T3CDSL	VDEQ-PDS	VDEQ-T2PWSSL	VDEQ-T2SWFSL	TEC-MW2		TEC-MW3		TEC-MW4		TEC-MW5	
Date:								5/1/06	3/30/16	5/1/06	3/30/16	5/1/06	3/30/16	5/1/06	3/30/16
TPH 8015															
TPH-DRO	mg/L	**NE**	**NE**	**NE**	**15**	**NE**	**NE**	ND	**0.29**	ND	**0.13**	ND	**0.75**	ND	<0.12
VOCs 8021B															
Benzene	ug/L	**13.7**	**57.3**	**14.2**	**12**	**22**	**510**	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0
Toluene	ug/L	**1920**	**8100**	**949**	**43**	**510**	**6000**	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0
Ethylbenzene	ug/L	**34.1**	**152**	**591**	**4.3**	**530**	**2100**	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0
m,p-Xylenes	ug/L	**150**	**1290**	**20.8**	**33**	**NE**	**NE**	ND	<2.0	ND	<2.0	ND	<2.0	ND	<2.0
o-Xylenes	ug/L	**47.2**	**208**	**20.9**	**33**	**NE**	**NE**	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0
Naphthalene	ug/L	**17.2**	**72.3**	**0.722**	**8.9**	**NE**	**NE**	ND	**4.9**	ND	<1.0	ND	**4.3**	ND	<1.0

NOTES:
TPH = total petroleum hydrocarbons
TPH-DRO = diesel range TPH
TPH-GRO = gasoline range TPH
VOCs = volatile organic compounds
ug/L = micrograms per liter
mg/L = milligrams per liter
ND = not detected above analytical method reporting limit (RL)
VDEQ = Commonwealth of Virginia Department of Environmental Quality
VDEQ-T3RGSL = VDEQ Tier III residential groundwater vapor intrusion screening level
VDEQ-T3CGSL = VDEQ Tier III industrial groundwater vapor intrusion screening level
VDEQ-T3CDSL = VDEQ Tier III construction direct (<15 feet) screening level
VDEQ-PDS = general permit discharge standard for petroleum contaminated water
VDEQ-T2PWSSL = VDEQ Tier II public water supply screening level
VDEQ-T2SWFSL = VDEQ Tier II surface water fresh screening level
NE = not established
Bold and right justification designates target compound was detected at a concentration above RL
Yellow highlighting designates target compound was detected at a concentration above the VDEQ groundwater screening level in at least 1 sample
Blue highlighting designates target compound was detected at a concentration above the VDEQ surface water screening level in at least 1 sample
Green highlighting designates target compound was detected at a concentration above the VDEQ groundwater and surface water screening level in at least 1 sample

TABLE 5E. ICOR 2016 GROUNDWATER ANALYTICAL RESULTS (DETECTIONS ONLY)

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

Sample ID:	Units	VDEQ-T3RGSL	VDEQ-T3IGSL	VDEQ-T3CDSL	VDEQ-PDS	VDEQ-T2PWSSL	VDEQ-T2SWFSL	TEC-MW2		TEC-MW4		ECS-MW4		MiHpt-05-GW		MiHpt-07-GW		MiHpt-08-GW		MiHpt-08-GW(37-40.5)	MiHpt-10-GW(25-28.5)	MiHpt-14-GW		MiHpt-14-GW(25-28.5)
Sample Date:								9/21/16	2/7/17	9/21/16	2/7/17	9/21/16	2/7/17	9/21/16	2/7/17	9/21/16	2/7/17	9/21/16	2/7/17	9/6/16	9/9/16	9/21/16	2/7/17	9/8/16
TPH 8015																								
TPH-GRO (C6-C10)	mg/L	**NE**	**NE**	**NE**	**15**	**NE**	**NE**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	**0.81**	**0.79**	**0.88**	**0.89**	<0.1	<0.1	<0.1	<0.1	**0.33**	**0.41**	<0.1
TPH-DRO (C10-C28)	mg/L	**NE**	**NE**	**NE**	**15**	**NE**	**NE**	**0.21**	**0.18**	**0.21**	**0.26**	<0.10	<0.10	**0.52**	**0.41**	**2.0**	**1.8**	**0.15**	**0.20**	**0.48**	**0.55**	**0.75**	**1.2**	<0.10
TPH 1664																								
Oil & Grease (Total Recovered)	mg/L	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.2	<2.4	NA	NA	<2.4
TPH	mg/L	**NE**	**NE**	**NE**	**15**	**NE**	**NE**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.2	<2.4	NA	NA	<2.4
TCL VOCs 8260B																								
2-Butanone (MEK)	ug/L	**22400**	**946000**	**358**	**NE**	**NE**	**NE**	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	**40**	<10	<10	<10	<10
Acetone	ug/L	**2240000**	**9780000**	**13400**	**NE**	**NE**	**NE**	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	**81**	**38**	<10	<10	<10
Benzene	ug/L	**13.7**	**57.3**	**14.2**	**12**	**22**	**510**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**110**	**150**	**25**	**31**	<1.0	<1.0	<1.0	**1.3**	**66**	**70**	<1.0
Chloroform	ug/L	**8**	**35.3**	**54.3**	**80**	**340**	**11000**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**1.4**	**1.3**	<1.0
Cyclohexane	ug/L	**103**	**424**	**3330**	**NE**	**NE**	**NE**	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Ethylbenzene	ug/L	**34.1**	**152**	**591**	**4.3**	**530**	**2100**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**26**	**14**	**61**	**57**	<1.0	<1.0	<1.0	<1.0	**5.4**	**7.4**	<1.0
Isopropylbenzene	ug/L	**89.3**	**383**	**19.9**	**NE**	**NE**	**NE**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**4.5**	**4.4**	**12**	**13**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Methyl-t-butyl ether	ug/L	**4580**	**19600**	**524**	**15**	**NE**	**NE**	**2.5**	**2.8**	<1.0	<1.0	**3.7**	**4.7**	<1.0	<1.0	**1.0**	**1.6**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**5.7**
Methylcyclohexane	ug/L	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Naphthalene	ug/L	**17.2**	**72.3**	**0.722**	**8.9**	**NE**	**NE**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**170**	**250**	**830**	**720**	**14**	**14**	<1.0	**7.5**	**37**	**48**	<1.0
Tetrachloroethene	ug/L	**5.8**	**24.9**	**10.4**	**5**	**6.9**	**33**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	ug/L	**1920**	**8100**	**949**	**43**	**510**	**6000**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**2.4**	**1.0**	**3.7**	**2.7**	<1.0	<1.0	<1.0	<1.0	**5.6**	**5.6**	<1.0
Trichloroethene	ug/L	**0.521**	**2.19**	**0.46**	**5**	**25**	**300**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m,p-Xylenes	ug/L	**150**	**1290**	**20.8**	**33**	**NE**	**NE**	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	**12**	**18**	**32**	**30**	<2.0	<2.0	<2.0	<2.0	**2.8**	**4.5**	<2.0
o-Xylene	ug/L	**47.2**	**208**	**20.9**	**33**	**NE**	**NE**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**23**	**38**	**32**	**38**	<1.0	<1.0	<1.0	<1.0	**4.8**	**7.4**	<1.0
TCL SVOCs 8270C																								
2,4,5-Trichlorophenol	ug/L	**NE**	**NE**	**7860**	**NE**	**300**	**600**	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.3	<5.0	<5.0	<5.0	<5.3	<5.0	<6.3	<5.0	<5.0	<5.0	<5.0
2,4-Dichlorophenol	ug/L	**NE**	**NE**	**1060**	**NE**	**77**	**290**	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.3	<5.0	<5.0	<5.0	<5.3	<5.0	<6.3	<5.0	**13**	<5.0	<5.0
2-Chlorophenol	ug/L	**NE**	**NE**	**1110**	**NE**	**81**	**150**	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.3	<5.0	<5.0	<5.0	<5.3	<5.0	<6.3	<5.0	<5.0	<5.0	<5.0
2-Methylnaphthalene	ug/L	**NE**	**NE**	**59**	**NE**	**NE**	**NE**	NA	<0.50	<5.0	<0.50	<5.0	<0.50	**16**	**1.9**	**40**	**28**	<5.3	<0.50	<6.3	<5.0	<5.0	**0.68**	<5.0
Acenaphthene	ug/L	**NE**	**NE**	**2950**	**NE**	**670**	**990**	NA	<0.50	<5.0	<0.50	<5.0	**2.5**	<5.3	**1.0**	**36**	**38**	<5.3	**1.6**	**8.4**	<5.0	**12**	**8.5**	<5.0
Acenaphthylene	ug/L	**NE**	**NE**	**1430**	**NE**	**NE**	**NE**	NA	<0.50	<5.0	<0.50	<5.0	<0.50	<5.3	<0.50	<5.0	**1.2**	<5.3	<0.50	<6.3	<5.0	<5.0	<0.50	<5.0
Anthracene	ug/L	**NE**	**NE**	**7850**	**NE**	**8300**	**40000**	NA	<0.50	<5.0	<0.50	<5.0	<0.50	<5.3	<0.50	<5.0	**1.6**	<5.3	<0.50	<6.3	<5.0	**6.3**	**2.4**	<5.0
Biphenyl (Diphenyl)	ug/L	**3.34**	**14.3**	**1.18**	**NE**	**NE**	**NE**	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.3	<5.0	**7.0**	**7.1**	<5.3	<5.0	<6.3	<5.0	<5.0	<5.0	<5.0
Carbazole	ug/L	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.3	<5.0	<5.0	<5.0	<5.3	<5.0	<6.3	<5.0	**7.4**	<5.0	<5.0
Dibenzofuran	ug/L	**NE**	**NE**	**48.4**	**NE**	**NE**	**NE**	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.3	<5.0	<5.0	<5.0	<5.3	<5.0	<6.3	<5.0	**13**	**7.2**	<5.0
Fluoranthene	ug/L	**NE**	**NE**	**311**	**NE**	**130**	**140**	NA	<0.50	<5.0	<0.50	<5.0	<0.50	<5.3	<0.50	<5.0	<0.50	<5.3	<0.50	<6.3	<5.0	<5.0	**1.9**	<5.0
Fluorene	ug/L	**NE**	**NE**	**4370**	**NE**	**1100**	**5300**	NA	<0.50	<5.0	<0.50	<5.0	**0.75**	<5.3	**1.1**	**8.2**	**9.5**	<5.3	**0.51**	<6.3	<5.0	**18**	**9.6**	<5.0
Naphthalene	ug/L	**17.2**	**72.3**	**0.722**	**8.9**	**NE**	**NE**	NA	<0.50	<5.0	<0.50	<5.0	<0.50	**83**	**47**	**200**	**170**	<5.3	**2.2**	<6.3	<5.0	**10**	**8.8**	<5.0
Pentachlorophenol	ug/L	**NE**	**NE**	**5.54**	**NE**	**0.03**	**0.04**	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.3	<5.0	<5.0	<5.0	<5.3	<5.0	<6.3	<5.0	<5.0	<5.0	<5.0
Phenanthrene	ug/L	**NE**	**NE**	**1430**	**NE**	**NE**	**NE**	NA	<0.50	<5.0	<0.50	<5.0	<0.50	<5.3	<0.50	**8.7**	**8.8**	<5.3	<0.50	**8.9**	<5.0	**21**	**6.9**	<5.0
Pyrene	ug/L	**NE**	**NE**	**1430**	**NE**	**830**	**4000**	NA	<0.50	<5.0	<0.50	<5.0	<0.50	<5.3	<0.50	<5.0	<0.50	<5.3	<0.50	<6.3	<5.0	<5.0	**1.3**	<5.0
PCBs 8082																								
PCBs	ug/L							NA	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	NA	NA	ND	NA	NA
Pesticides 8081B																								
Pesticides	ug/L							NA	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	NA	NA	NA	NA	ND
Herbicides 8151A																								
2,4,5-TP (Silvex)	ug/L	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	NA	NA	<0.19	NA	<0.19	NA	<0.19	NA	<0.19	NA	<1.9	NA	NA	NA	**4.4**	NA	NA
Dicamba	ug/L	**NE**	**NE**	**7490**	**NE**	**NE**	**NE**	NA	NA	<0.19	NA	<0.19	NA	<0.19	NA	<0.19	NA	<1.9	NA	NA	NA	<1.9	NA	NA
MCPP	ug/L	**NE**	**NE**	**639**	**NE**	**NE**	**NE**	NA	NA	<190	NA	<190	NA	<190	NA	<190	NA	<1900	NA	NA	NA	<1900	NA	NA
PPL Metals 6020A																								
Antimony	ug/L	**NE**	**NE**	**78.6**	**NE**	**5.6**	**640**	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50	<5.0	<5.0	<5.0	<5.0	NA	NA	<5.0	<5.0	NA
Arsenic	ug/L	**NE**	**NE**	**197**	**NE**	**1**	**150**	NA	**8.5**	**2.3**	**8.0**	**9.1**	**12**	**560**	**290**	**7.5**	**7.4**	**6.3**	**3.7**	NA	NA	**12**	**19**	NA
Beryllium	ug/L	**NE**	**NE**	**55**	**NE**	**NE**	**NE**	NA	<1.0	<1.0	<1.0	<1.0	<1.0	**22**	**89**	<1.0	<1.0	<1.0	<1.0	NA	NA	<1.0	<1.0	NA
Cadmium	ug/L	**NE**	**NE**	**19.2**	**NE**	**1.1**	**1.1**	NA	<1.0	<1.0	<1.0	<1.0	<1.0	**52**	**130**	<1.0	<1.0	<1.0	<1.0	NA	NA	**24**	**14**	NA
Chromium	ug/L	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	NA	**1.1**	<1.0	**6.4**	<1.0	<1.0	**570**	**800**	<1.0	**1.2**	<1.0	**1.4**	NA	NA	<1.0	<1.0	NA
Copper	ug/L	**NE**	**NE**	**6570**	**NE**	**9**	**9**	NA	**5.5**	<1.0	**17**	<1.0	<1.0	**14000**	**26000**	**5.6**	**12**	**5.8**	**2.6**	NA	NA	**1200**	**250**	NA
Lead	ug/L	**NE**	**NE**	**NE**	**NE**	**11**	**11**	NA	**11**	**58**	**2100**	<1.0	<1.0	**260**	**480**	**1.6**	**3.0**	**24**	**29**	NA	NA	<1.0	**1.4**	NA
Nickel	ug/L	**NE**	**NE**	**4950**	**NE**	**20**	**20**	NA	**2.0**	<1.0	**3.8**	<1.0	<1.0	**2000**	**2100**	<1.0	<1.0	**1.1**	<1.0	NA	NA	**16**	**12**	NA
Selenium	ug/L	**NE**	**NE**	**3280**	**NE**	**5**	**5**	NA	<1.0	<1.0	<1.0	<1.0	<1.0	**4.9**	**16**	<1.0	<1.0	<1.0	<1.0	NA	NA	<1.0	<1.0	NA
Thallium	ug/L	**NE**	**NE**	**26.3**	**NE**	**0.24**	**0.47**	NA	<1.0	<1.0	<1.0	<1.0	<1.0	**4.3**	<10	<1.0	<1.0	<1.0	<1.0	NA	NA	<1.0	<1.0	NA
Zinc	ug/L	**NE**	**NE**	**236000**	**NE**	**120**	**120**	NA	**250**	<20	**87**	<20	<20	**35000**	**43000**	**69**	**73**	**21**	**22**	NA	NA	**16000**	**15000**	NA

NOTES:
TPH = total petroleum hydrocarbons
TPH-DRO = diesel range TPH
TPH-GRO = gasoline range TPH
TCL = Target Compound List
VOCs = volatile organic compounds
SVOCs = semi-VOCs
PCBs = polychlorinated biphenyls
PPL = Priority Pollutant List
EPA 8260B = United States Environmental Protection Agency SW-846 analytical method
ug/L = micrograms per liter
mg/L = milligrams per liter
<1.0 = not detected above analytical method reporting limit (RL)
NA = not analyzed
<1.0 = not detected above analytical method reporting limit (RL)
VDEQ = Commonwealth of Virginia Department of Environmental Quality
VDEQ-T3RGSL = VDEQ Tier III residential groundwater vapor intrusion screening level
VDEQ-T3CGSL = VDEQ Tier III industrial groundwater vapor intrusion screening level
VDEQ-T3CDSL = VDEQ Tier III construction direct (<15 feet) screening level
VDEQ-PDS = general permit discharge standard for petroleum contaminated water
VDEQ-T2PWSSL = VDEQ Tier II public water supply screening level
VDEQ-T2SWFSL = VDEQ Tier II surface water fresh screening level
NE = not established
Bold and right justification designates target compound was detected at a concentration above RL
Yellow highlighting designates target compound was detected at a concentration above the VDEQ groundwater screening level in at least 1 sample
Blue highlighting designates target compound was detected at a concentration above the VDEQ surface water screening level in at least 1 sample
Green highlighting designates target compound was detected at a concentration above the VDEQ groundwater and surface water screening level in at least 1 sample

TABLE 5E. ICOR 2016 GROUNDWATER ANALYTICAL RESULTS (DETECTIONS ONLY)

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

Sample ID:	Units	VDEQ-T3RGSL	VDEQ-T3IGSL	VDEQ-T3CDSL	VDEQ-PDS	VDEQ-T2PWSSL	VDEQ-T2SWFSL	MiHpt-15-GW		MiHpt-20-GW		MiHpt-21-GW		MiHpt-21-GW(25-28.5)	MiHpt-22-GW		MiHpt-22-GW(25-28.5)
Sample Date:								9/21/16	2/7/17	9/21/16	2/7/17	9/21/16	2/7/17	9/9/16	9/21/16	2/7/17	9/9/16
TPH 8015																	
TPH-GRO (C6-C10)	mg/L	NE	NE	NE	15	NE	NE	<0.1	<0.1	0.18	0.14	7.5	15	<0.1	0.38	2.3	<0.1
TPH-DRO (C10-C28)	mg/L	NE	NE	NE	15	NE	NE	<0.10	<0.10	0.72	0.62	1.7	1.2	<0.10	0.27	0.19	<0.10
TPH 1664																	
Oil & Grease (Total Recovered)	mg/L	NE	NE	NE	NE	NE	NE	NA	NA	NA	NA	NA	NA	<2.3	NA	NA	<2.2
TPH	mg/L	NE	NE	NE	15	NE	NE	NA	NA	NA	NA	NA	NA	<2.3	NA	NA	<2.2
TCL VOCs 8260B																	
2-Butanone (MEK)	ug/L	22400	946000	358	NE	NE	NE	<10	<10	<10	<10	<50	<100	<10	<10	<10	<10
Acetone	ug/L	2240000	9780000	13400	NE	NE	NE	<10	<10	<10	<10	<50	<100	<10	<10	<10	<10
Benzene	ug/L	13.7	57.3	14.2	12	22	510	9.9	6.2	14	13	58	59	<1.0	130	630	<1.0
Chloroform	ug/L	8	35.3	54.3	80	340	11000	7.7	63	<1.0	<1.0	<5.0	<10	<1.0	<1.0	<1.0	<1.0
Cyclohexane	ug/L	103	424	3330	NE	NE	NE	<10	<10	<10	<10	560	710	<10	10	<10	<10
Ethylbenzene	ug/L	34.1	152	591	4.3	530	2100	<1.0	<1.0	1.4	<1.0	150	160	<1.0	1.6	16	<1.0
Isopropylbenzene	ug/L	89.3	383	19.9	NE	NE	NE	<1.0	<1.0	<1.0	<1.0	17	15	<1.0	<1.0	1.6	<1.0
Methyl-t-butyl ether	ug/L	4580	19600	524	15	NE	NE	<1.0	<1.0	<1.0	<1.0	<5.0	<10	5.9	<1.0	<1.0	4.8
Methylcyclohexane	ug/L	NE	NE	NE	NE	NE	NE	<10	<10	<10	<10	460	690	<10	<10	<10	<10
Naphthalene	ug/L	17.2	72.3	0.722	8.9	NE	NE	<1.0	1.1	67	42	6.4	<10	<1.0	<1.0	3.1	<1.0
Tetrachloroethene	ug/L	5.8	24.9	10.4	5	6.9	33	<1.0	<1.0	<1.0	<1.0	47	64	<1.0	<1.0	<1.0	<1.0
Toluene	ug/L	1920	8100	949	43	510	6000	<1.0	<1.0	2.6	2.0	45	44	<1.0	<1.0	3.5	<1.0
Trichloroethene	ug/L	0.521	2.19	0.46	5	25	300	<1.0	<1.0	<1.0	<1.0	10	11	<1.0	<1.0	<1.0	<1.0
m,p-Xylenes	ug/L	150	1290	20.8	33	NE	NE	<2.0	<2.0	<2.0	<2.0	190	240	<2.0	<2.0	<2.0	<2.0
o-Xylene	ug/L	47.2	208	20.9	33	NE	NE	<1.0	<1.0	1.4	1.1	9.1	11	<1.0	<1.0	8.4	<1.0
TCL SVOCs 8270C																	
2,4,5-Trichlorophenol	ug/L	NE	NE	7860	NE	300	600	<5.0	<5.0	<5.0	<5.0	53	19	<5.0	<5.0	<5.0	<5.0
2,4-Dichlorophenol	ug/L	NE	NE	1060	NE	77	290	<5.0	<5.0	<5.0	<5.0	710	220	<5.0	<5.0	<5.0	8.1
2-Chlorophenol	ug/L	NE	NE	1110	NE	81	150	<5.0	<5.0	<5.0	<5.0	8.3	<5.0	<5.0	<5.0	<5.0	<5.0
2-Methylnaphthalene	ug/L	NE	NE	59	NE	NE	NE	<5.0	<0.50	<5.0	<0.50	<5.0	<0.50	<5.0	<5.0	<0.50	<5.0
Acenaphthene	ug/L	NE	NE	2950	NE	670	990	<5.0	<0.50	6.3	1.7	<5.0	<0.50	<5.0	<5.0	<0.50	<5.0
Acenaphthylene	ug/L	NE	NE	1430	NE	NE	NE	<5.0	<0.50	<5.0	0.94	<5.0	<0.50	<5.0	<5.0	<0.50	<5.0
Anthracene	ug/L	NE	NE	7850	NE	8300	40000	<5.0	<0.50	<5.0	<0.50	<5.0	<0.50	<5.0	<5.0	<0.50	<5.0
Biphenyl (Diphenyl)	ug/L	3.34	14.3	1.18	NE	NE	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Carbazole	ug/L	NE	NE	NE	NE	NE	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Dibenzofuran	ug/L	NE	NE	48.4	NE	NE	NE	<5.0	<5.0	11	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Fluoranthene	ug/L	NE	NE	311	NE	130	140	<5.0	<0.50	<5.0	<0.50	<5.0	<0.50	<5.0	<5.0	<0.50	<5.0
Fluorene	ug/L	NE	NE	4370	NE	1100	5300	<5.0	<0.50	12	2.5	<5.0	<0.50	<5.0	<5.0	<0.50	<5.0
Naphthalene	ug/L	17.2	72.3	0.722	8.9	NE	NE	<5.0	1.7	13	4.3	35	0.66	<5.0	<5.0	<0.50	<5.0
Pentachlorophenol	ug/L	NE	NE	5.54	NE	0.03	0.04	<5.0	<5.0	<5.0	<5.0	13	<5.0	<5.0	<5.0	<5.0	<5.0
Phenanthrene	ug/L	NE	NE	1430	NE	NE	NE	<5.0	<0.50	10	1.5	<5.0	<0.50	<5.0	<5.0	<0.50	<5.0
Pyrene	ug/L	NE	NE	1430	NE	830	4000	<5.0	<0.50	<5.0	<0.50	<5.0	<0.50	<5.0	<5.0	<0.50	<5.0
PCBs 8082																	
PCBs	ug/L							ND	NA	ND	NA	ND	NA	NA	ND	NA	NA
Pesticides 8081B																	
Pesticides	ug/L							ND	NA	ND	NA	ND	NA	NA	ND	NA	NA
Herbicides 8151A																	
2,4,5-TP (Silvex)	ug/L	NE	NE	NE	NE	NE	NE	<0.19	NA	<0.20	NA	<19	NA	NA	<1.9	NA	NA
Dicamba	ug/L	NE	NE	7490	NE	NE	NE	<0.19	NA	0.63	NA	23	NA	NA	<1.9	NA	NA
MCPP	ug/L	NE	NE	639	NE	NE	NE	710	NA	<200	NA	85000	NA	NA	<1900	NA	NA
PPL Metals 6020A																	
Antimony	ug/L	NE	NE	78.6	NE	5.6	640	<5.0	61	<5.0	<5.0	<5.0	<5.0	NA	<5.0	<5.0	NA
Arsenic	ug/L	NE	NE	197	NE	1	150	51	4600	13	12	590	330	NA	180	230	NA
Beryllium	ug/L	NE	NE	55	NE	NE	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<1.0	<1.0	NA
Cadmium	ug/L	NE	NE	19.2	NE	1.1	1.1	13	3.4	7.4	61	<1.0	<1.0	NA	<1.0	<1.0	NA
Chromium	ug/L	NE	NE	NE	NE	NE	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	1.9	<1.0	NA
Copper	ug/L	NE	NE	6570	NE	9	9	12	36	12	59	1.4	<1.0	NA	2.4	<1.0	NA
Lead	ug/L	NE	NE	NE	NE	11	11	<1.0	<1.0	2.0	4.9	<1.0	<1.0	NA	1.6	<1.0	NA
Nickel	ug/L	NE	NE	4950	NE	20	20	3.4	4.3	5.0	9.5	2.1	1.5	NA	2.0	<1.0	NA
Selenium	ug/L	NE	NE	3280	NE	5	5	1.6	8.0	8.3	18	3.3	1.2	NA	<1.0	<1.0	NA
Thallium	ug/L	NE	NE	26.3	NE	0.24	0.47	<1.0	2.6	<1.0	<1.0	<1.0	<1.0	NA	<1.0	<1.0	NA
Zinc	ug/L	NE	NE	236000	NE	120	120	3800	1800	8600	13000	<20	20	NA	22	<20	NA

NOTES:
TPH = total petroleum hydrocarbons
TPH-DRO = diesel range TPH
TPH-GRO = gasoline range TPH
TCL = Target Compound List
VOCs = volatile organic compounds
SVOCs = semi-VOCs
PCBs = polychlorinated biphenyls
PPL = Priority Pollutant List
EPA 8260B = United States Environmental Protection Agency SW-846 analytical method
ug/L = micrograms per liter
mg/L = milligrams per liter
<1.0 = not detected above analytical method reporting limit (RL)
NA = not analyzed
<1.0 = not detected above analytical method reporting limit (RL)
VDEQ = Commonwealth of Virginia Department of Environmental Quality
VDEQ-T3RGSL = VDEQ Tier III residential groundwater vapor intrusion screening level
VDEQ-T3CGSL = VDEQ Tier III industrial groundwater vapor intrusion screening level
VDEQ-T3CDSL = VDEQ Tier III construction direct (<15 feet) screening level
VDEQ-PDS = general permit discharge standard for petroleum contaminated water
VDEQ-T2PWSSL = VDEQ Tier II public water supply screening level
VDEQ-T2SWFSL = VDEQ Tier II surface water fresh screening level
NE = not established
Bold and right justification designates target compound was detected at a concentration above RL
Yellow highlighting designates target compound was detected at a concentration above the VDEQ groundwater screening level in at least 1 sample
Blue highlighting designates target compound was detected at a concentration above the VDEQ surface water screening level in at least 1 sample
Green highlighting designates target compound was detected at a concentration above the VDEQ groundwater and surface water screening level in at least 1 sample

TABLE 5F. ICOR 2016-2018 GROUNDWATER ANALYTICAL RESULTS (VOC AND SVOC DETECTIONS ONLY)

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

Sample ID:	Units	VDEQ-T3RGSL	VDEQ-T3IGSL	VDEQ-T3CDSL	VDEQ-PDS	VDEQ-T2PWSSL	VDEQ-T2SWFSL	TEC-MW2				TEC-MW4				ECS-MW4				MiHpt-05				MiHpt-07			
Sample Date:								9/21/16	2/7/17	1/29/18	6/7/18	9/21/16	2/7/17	1/29/18	6/7/18	9/21/16	2/7/17	1/29/18	6/71/18	9/21/16	2/7/17	1/29/18	6/7/18	9/21/16	2/7/17	1/29/18	6/7/18
TPH 8015																											
TPH-GRO (C6-C10)	mg/L	NE	NE	NE	15	NE	NE	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	**0.81**	**0.79**	**0.6**	**0.95**	**0.88**	**0.89**	**1.4**	**2.1**
TPH-DRO (C10-C28)	mg/L	NE	NE	NE	15	NE	NE	**0.21**	**0.18**	**0.28**	**0.22**	**0.21**	**0.26**	**0.30**	**0.17**	<0.10	<0.10	**0.11**	<0.10	**0.52**	**0.41**	**0.41**	**0.48**	**2.0**	**1.8**	**2.6**	**3.6**
TCL VOCs 8260B																											
Acetone	ug/L	**2240000**	**9780000**	**13400**	NE	NE	NE	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Benzene	ug/L	**13.7**	**57.3**	**14.2**	**12**	**22**	**510**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**110**	**150**	**130**	**130**	**25**	**31**	**59**	**75**
Chloroform	ug/L	**8**	**35.3**	**54.3**	**80**	**340**	**11000**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Cyclohexane	ug/L	**103**	**424**	**3330**	NE	NE	NE	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Ethylbenzene	ug/L	**34.1**	**152**	**591**	**4.3**	**530**	**2100**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**26**	**14**	**13**	**24**	**61**	**57**	**94**	**110**
Isopropylbenzene	ug/L	**89.3**	**383**	**19.9**	NE	NE	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**4.5**	**4.4**	**5.5**	**7.9**	**12**	**13**	**15**	**23**
Methyl-t-butyl ether	ug/L	**4580**	**19600**	**524**	15	NE	NE	**2.5**	**2.8**	**2.3**	**1.5**	<1.0	<1.0	<1.0	<1.0	**3.7**	**4.7**	**4.9**	**4.8**	<1.0	<1.0	<1.0	<1.0	**1.0**	**1.6**	**1.4**	**1.7**
Methylcyclohexane	ug/L	NE	NE	NE	NE	NE	NE	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Naphthalene	ug/L	**17.2**	**72.3**	**0.722**	**8.9**	NE	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**170**	**250**	**220**	**340**	**830**	**720**	**970**	**1400**
Tetrachloroethene (PCE)	ug/L	**5.8**	**24.9**	**10.4**	**5**	**6.9**	**33**	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<5.0	<1.0
Toluene	ug/L	**1920**	**8100**	**949**	**43**	**510**	**6000**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**2.4**	**1.0**	**1.5**	**2.6**	**3.7**	**2.7**	**2.9**	**2.9**
Trichloroethene (TCE)	ug/L	**0.521**	**2.19**	**0.46**	**5**	**25**	**300**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	ug/L	NE	NE	**2260**	**70**	NE	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	ug/L	NE	NE	**157**	**100**	**140**	**10000**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m,p-Xylenes	ug/L	**150**	**1290**	**20.8**	**33**	NE	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	**12**	**18**	**19**	**22**	**32**	**30**	**39**	**52**
o-Xylene	ug/L	**47.2**	**208**	**20.9**	**33**	NE	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**23**	**38**	**39**	**37**	**32**	**38**	**56**	**61**
TCL SVOCs 8270C																											
2,4,5-Trichlorophenol	ug/L	NE	NE	**7860**	NE	**300**	**600**	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
2,4-Dichlorophenol	ug/L	NE	NE	**1060**	NE	**77**	**290**	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
2-Chlorophenol	ug/L	NE	NE	**1110**	NE	**81**	**150**	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
2-Methylnaphthalene	ug/L	NE	NE	**59**	NE	NE	NE	NA	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	**16**	**1.9**	**1.4**	**8.0**	**40**	**28**	**4.7**	**37**
Acenaphthene	ug/L	NE	NE	**2950**	NE	**670**	**990**	NA	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<5.0	**2.5**	**2.1**	**1.1**	<5.3	**1.0**	<0.50	**1.7**	**36**	**38**	**14**	**25**
Acenaphthylene	ug/L	NE	NE	**1430**	NE	NE	NE	NA	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<5.3	<0.50	<0.50	<0.50	<5.0	**1.2**	<0.50	**0.57**
Anthracene	ug/L	NE	NE	**7850**	NE	**8300**	**40000**	NA	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<5.3	<0.50	<0.50	<0.50	<5.0	**1.6**	**0.61**	**1.7**
Biphenyl (Diphenyl)	ug/L	**3.34**	**14.3**	**1.18**	NE	NE	NE	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.3	<5.0	<5.0	<5.0	**7.0**	**7.1**	<5.0	**5.4**
Carbazole	ug/L	NE	NE	NE	NE	NE	NE	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Dibenzofuran	ug/L	NE	NE	**48.4**	NE	NE	NE	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Fluoranthene	ug/L	NE	NE	**311**	NE	**130**	**140**	NA	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<5.3	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50
Fluorene	ug/L	NE	NE	**4370**	NE	**1100**	**5300**	NA	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<5.0	**0.75**	**0.66**	<0.50	<5.3	**1.1**	<0.50	**1.3**	**8.2**	**9.5**	**3.5**	**7.2**
Naphthalene	ug/L	**17.2**	**72.3**	**0.722**	**8.9**	NE	NE	NA	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	**83**	**47**	**16**	**48**	**200**	**170**	**73**	**170**
Pentachlorophenol	ug/L	NE	NE	**5.54**	NE	**0.03**	**0.04**	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Phenanthrene	ug/L	NE	NE	**1430**	NE	NE	NE	NA	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<5.3	<0.50	<0.50	**0.55**	**8.7**	**8.8**	**3.2**	**8.3**
Pyrene	ug/L	NE	NE	**1430**	NE	**830**	**4000**	NA	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<5.3	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50

NOTES:
TPH = total petroleum hydrocarbons
TPH-DRO = diesel range TPH
TPH-GRO = gasoline range TPH
TCL = Target Compound List
VOCs = volatile organic compounds
SVOCs = semi-VOCs
EPA 8260B = United States Environmental Protection Agency SW-846 analytical method
ug/L = micrograms per liter
mg/L = milligrams per liter
<1.0 = not detected above analytical method reporting limit (RL)
VDEQ = Commonwealth of Virginia Department of Environmental Quality
VDEQ-T3RGSL = VDEQ Tier III residential groundwater vapor intrusion screening level
VDEQ-T3CGSL = VDEQ Tier III industrial groundwater vapor intrusion screening level
VDEQ-T3CDSL = VDEQ Tier III construction direct (<15 feet) screening level
VDEQ-PDS = general permit discharge standard for petroleum contaminated water
VDEQ-T2PWSSL = VDEQ Tier II public water supply screening level
VDEQ-T2SWFSL = VDEQ Tier II surface water fresh screening level
NE = not established
Bold and right justification designates target compound was detected at a concentration above RL
Yellow highlighting designates target compound was detected at a concentration above the VDEQ groundwater screening level in at least 1 sample
Blue highlighting designates target compound was detected at a concentration above the VDEQ surface water screening level in at least 1 sample
Green highlighting designates target compound was detected at a concentration above the VDEQ groundwater and surface water screening level in at least 1 sample

TABLE 5F. ICOR 2016-2018 GROUNDWATER ANALYTICAL RESULTS (VOC AND SVOC DETECTIONS ONLY)

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

Sample ID:	Units	VDEQ-T3RGSL	VDEQ-T3IGSL	VDEQ-T3CDSL	VDEQ-PDS	VDEQ-T2PWSSL	VDEQ-T2SWFSL	MiHpt-08				MiHpt-14				MiHpt-15				MiHpt-20				MiHpt-21			
Sample Date:								9/21/16	2/7/17	1/29/18	6/7/18	9/21/16	2/7/17	1/29/18	6/7/18	9/21/16	2/7/17	1/29/18	6/7/18	9/21/16	2/7/17	1/29/18	6/7/18	9/21/16	2/7/17	1/29/18	6/7/18
TPH 8015																											
TPH-GRO (C6-C10)	mg/L	NE	NE	NE	15	NE	NE	<0.1	<0.1	<0.1	<0.1	**0.33**	**0.41**	**0.28**	**0.41**	<0.1	<0.1	<0.1	<0.1	**0.18**	**0.14**	**0.16**	<0.1	**7.5**	**15**	**4.5**	**12**
TPH-DRO (C10-C28)	mg/L	NE	NE	NE	15	NE	NE	**0.15**	**0.20**	**0.22**	**0.17**	**0.75**	**1.2**	**1.5**	**1.3**	<0.10	<0.10	<0.10	<0.10	**0.72**	**0.62**	**0.77**	<0.10	**1.7**	**1.2**	**2.3**	**2.4**
TCL VOCs 8260B																											
Acetone	ug/L	**2240000**	**9780000**	**13400**	NE	NE	NE	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<50	<100	**19**	<10
Benzene	ug/L	**13.7**	**57.3**	**14.2**	12	22	510	<1.0	<1.0	<1.0	<1.0	66	70	66	92	**9.9**	**6.2**	<1.0	**1.6**	14	13	14	<1.0	58	59	75	74
Chloroform	ug/L	8	35.3	54.3	80	340	11000	<1.0	<1.0	<1.0	<1.0	**1.4**	**1.3**	**2.2**	**1.1**	**7.7**	63	12	43	<1.0	<1.0	<1.0	**1.2**	<5.0	<10	<1.0	8.4
Cyclohexane	ug/L	103	424	3330	NE	NE	NE	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	560	710	460	1200
Ethylbenzene	ug/L	34.1	152	591	4.3	530	2100	<1.0	<1.0	<1.0	<1.0	5.4	7.4	6.0	9.8	<1.0	<1.0	<1.0	<1.0	**1.4**	<1.0	**1.5**	<1.0	150	160	73	140
Isopropylbenzene	ug/L	**89.3**	**383**	**19.9**	NE	NE	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**1.3**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**17**	**15**	**8.4**	**15**
Methyl-t-butyl ether	ug/L	**4580**	**19600**	**524**	15	NE	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<10	<1.0	<1.0
Methylcyclohexane	ug/L	NE	NE	NE	NE	NE	NE	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	**460**	**690**	**340**	**670**
Naphthalene	ug/L	17.2	72.3	0.722	8.9	NE	NE	**14**	**14**	<1.0	**21**	**37**	**48**	**48**	**62**	<1.0	**1.1**	<1.0	<1.0	**67**	**42**	**64**	<1.0	6.4	<10	3.2	3.2
Tetrachloroethene (PCE)	ug/L	5.8	24.9	10.4	5	6.9	33	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<5.0	<1.0	47	64	26	60
Toluene	ug/L	**1920**	**8100**	**949**	43	**510**	**6000**	<1.0	<1.0	<1.0	<1.0	**5.6**	**5.6**	**4.7**	**6.1**	<1.0	<1.0	<1.0	<1.0	**2.6**	**2.0**	**2.2**	<1.0	45	44	**31**	46
Trichloroethene (TCE)	ug/L	0.521	2.19	0.46	5	25	300	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	10	11	10	14
cis-1,2-Dichloroethene	ug/L	NE	NE	**2260**	**70**	NE	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**2.1**	**2.1**
trans-1,2-Dichloroethene	ug/L	NE	NE	**157**	**100**	**140**	**10000**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**1.3**
m,p-Xylenes	ug/L	150	**1290**	20.8	33	NE	NE	<2.0	<2.0	<2.0	<2.0	**2.8**	**4.5**	**3.8**	**4.9**	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	190	240	110	200
o-Xylene	ug/L	47.2	208	20.9	33	NE	NE	<1.0	<1.0	<1.0	<1.0	**4.8**	**7.4**	**5.7**	**8.5**	<1.0	<1.0	<1.0	<1.0	**1.4**	**1.1**	**1.6**	<1.0	**9.1**	**11**	**4.6**	**7.6**
TCL SVOCs 8270C																											
2,4,5-Trichlorophenol	ug/L	NE	NE	**7860**	NE	300	600	<5.3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	**53**	**19**	**11**	**32**
2,4-Dichlorophenol	ug/L	NE	NE	**1060**	NE	77	290	<5.3	<5.0	<5.0	<5.0	**13**	<5.0	<5.3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	710	220	120	370
2-Chlorophenol	ug/L	NE	NE	**1110**	NE	81	150	<5.3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	**8.3**	<5.0	<5.0	**5.1**
2-Methylnaphthalene	ug/L	NE	NE	**59**	NE	NE	NE	<5.3	<0.50	<0.50	**0.74**	<5.0	**0.68**	<0.53	**0.54**	<5.0	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50
Acenaphthene	ug/L	NE	NE	**2950**	NE	670	990	<5.3	**1.6**	**0.66**	**1.4**	**12**	**8.5**	**2.5**	**5.9**	<5.0	<0.50	<0.50	<0.50	**6.3**	**1.7**	**2.0**	<0.50	<5.0	<0.50	<0.50	<0.50
Acenaphthylene	ug/L	NE	NE	**1430**	NE	NE	NE	<5.3	<0.50	<0.50	<0.50	<5.0	<0.50	<0.53	<0.50	<5.0	<0.50	<0.50	<0.50	<5.0	**0.94**	**1.2**	<0.50	<5.0	<0.50	<0.50	<0.50
Anthracene	ug/L	NE	NE	**7850**	NE	8300	40000	<5.3	<0.50	<0.50	<0.50	**6.3**	**2.4**	**0.83**	**1.6**	<5.0	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50
Biphenyl (Diphenyl)	ug/L	3.34	14.3	1.18	NE	NE	NE	<5.3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Carbazole	ug/L	NE	NE	NE	NE	NE	NE	<5.3	<5.0	<5.0	<5.0	**7.4**	<5.0	<5.3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Dibenzofuran	ug/L	NE	NE	48.4	NE	NE	NE	<5.3	<5.0	<5.0	<5.0	**13**	**7.2**	<5.3	<5.0	<5.0	<5.0	<5.0	<5.0	**11**	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Fluoranthene	ug/L	NE	NE	311	NE	130	140	<5.3	<0.50	<0.50	<0.50	<5.0	**1.9**	**0.60**	**1.1**	<5.0	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50
Fluorene	ug/L	NE	NE	4370	NE	1100	5300	<5.3	**0.51**	<0.50	**0.68**	**18**	**9.6**	**2.9**	**6.0**	<5.0	<0.50	<0.50	<0.50	**12**	**2.5**	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50
Naphthalene	ug/L	17.2	72.3	0.722	8.9	NE	NE	<5.3	2.2	<0.50	4.1	10	8.8	2.9	7.1	<5.0	1.7	1.8	<0.50	13	4.3	5.7	0.52	35	**0.66**	<0.50	26
Pentachlorophenol	ug/L	NE	NE	5.54	NE	0.03	0.04	<5.3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	13	<5.0	<5.0	6.8
Phenanthrene	ug/L	NE	NE	**1430**	NE	NE	NE	<5.3	<0.50	<0.50	<0.50	**21**	**6.9**	**2.3**	**4.1**	<5.0	<0.50	<0.50	<0.50	**10**	**1.5**	**1.7**	<0.50	<5.0	<0.50	<0.50	<0.50
Pyrene	ug/L	NE	NE	**1430**	NE	830	4000	<5.3	<0.50	<0.50	<0.50	<5.0	**1.3**	<0.53	**0.71**	<5.0	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50

NOTES:
TPH = total petroleum hydrocarbons
TPH-DRO = diesel range TPH
TPH-GRO = gasoline range TPH
TCL = Target Compound List
VOCs = volatile organic compounds
SVOCs = semi-VOCs
EPA 8260B = United States Environmental Protection Agency SW-846 analytical method
ug/L = micrograms per liter
mg/L = milligrams per liter
<1.0 = not detected above analytical method reporting limit (RL)
VDEQ = Commonwealth of Virginia Department of Environmental Quality
VDEQ-T3RGSL = VDEQ Tier III residential groundwater vapor intrusion screening level
VDEQ-T3CGSL = VDEQ Tier III industrial groundwater vapor intrusion screening level
VDEQ-T3CDSL = VDEQ Tier III construction direct (<15 feet) screening level
VDEQ-PDS = general permit discharge standard for petroleum contaminated water
VDEQ-T2PWSSL = VDEQ Tier II public water supply screening level
VDEQ-T2SWFSL = VDEQ Tier II surface water fresh screening level
NE = not established
Bold and right justification designates target compound was detected at a concentration above RL
Yellow highlighting designates target compound was detected at a concentration above the VDEQ groundwater screening level in at least 1 sample
Blue highlighting designates target compound was detected at a concentration above the VDEQ surface water screening level in at least 1 sample
Green highlighting designates target compound was detected at a concentration above the VDEQ groundwater and surface water screening level in at least 1 sample

TABLE 5F. ICOR 2016-2018 GROUNDWATER ANALYTICAL RESULTS (VOC AND SVOC DETECTIONS ONLY)

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

Sample ID:	Units	VDEQ-T3RGSL	VDEQ-T3IGSL	VDEQ-T3CDSL	VDEQ-PDS	VDEQ-T2PWSSL	VDEQ-T2SWFSL	MiHpt-22				MW-23		MW-24		MW-25	
Sample Date:								9/21/16	2/7/17	1/29/18	6/7/18	1/29/18	6/7/18	1/29/18	6/7/18	1/29/18	6/7/18
TPH 8015																	
TPH-GRO (C6-C10)	mg/L	NE	NE	NE	15	NE	NE	**0.38**	**2.3**	**0.27**	**0.56**	<0.1	<0.1	<0.1	<0.1	**0.11**	**0.16**
TPH-DRO (C10-C28)	mg/L	NE	NE	NE	15	NE	NE	**0.27**	**0.19**	**33**	**0.38**	**0.28**	**0.15**	**1.1**	**0.61**	**0.45**	**0.33**
TCL VOCs 8260B																	
Acetone	ug/L	**2240000**	**9780000**	**13400**	NE	NE	NE	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Benzene	ug/L	**13.7**	**57.3**	**14.2**	12	22	510	**130**	**630**	**34**	**200**	<1.0	<1.0	<1.0	<1.0	**14**	**17**
Chloroform	ug/L	**8**	**35.3**	**54.3**	80	340	11000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Cyclohexane	ug/L	**103**	**424**	**3330**	NE	NE	NE	**10**	<10	<10	<10	<10	<10	<10	<10	<10	<10
Ethylbenzene	ug/L	**34.1**	**152**	**591**	4.3	530	2100	**1.6**	**16**	<1.0	**2.1**	<1.0	<1.0	<1.0	<1.0	**2.3**	**2.1**
Isopropylbenzene	ug/L	**89.3**	**383**	**19.9**	NE	NE	NE	<1.0	**1.6**	**1.2**	<1.0	<1.0	<1.0	**1.7**	**2.7**	**1.6**	**1.7**
Methyl-t-butyl ether	ug/L	**4580**	**19600**	**524**	15	NE	NE	<1.0	<1.0	<1.0	<1.0	**4.3**	**5.5**	**3.9**	**1.9**	<1.0	<1.0
Methylcyclohexane	ug/L	NE	NE	NE	NE	NE	NE	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Naphthalene	ug/L	**17.2**	**72.3**	**0.722**	8.9	NE	NE	<1.0	**3.1**	**1.3**	<1.0	**1.4**	**1.3**	**2.6**	**3.4**	**83**	**77**
Tetrachloroethene (PCE)	ug/L	**5.8**	**24.9**	**10.4**	5	6.9	33	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<5.0	<1.0	<5.0	<1.0
Toluene	ug/L	**1920**	**8100**	**949**	43	510	6000	<1.0	**3.5**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene (TCE)	ug/L	**0.521**	**2.19**	**0.46**	5	25	300	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	ug/L	NE	NE	**2260**	70	NE	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	ug/L	NE	NE	**157**	100	140	10000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m,p-Xylenes	ug/L	**150**	**1290**	**20.8**	33	NE	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
o-Xylene	ug/L	**47.2**	**208**	**20.9**	33	NE	NE	<1.0	**8.4**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**2.4**	**1.9**
TCL SVOCs 8270C																	
2,4,5-Trichlorophenol	ug/L	NE	NE	**7860**	NE	**300**	**600**	<5.0	<5.0	<5.6	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
2,4-Dichlorophenol	ug/L	NE	NE	**1060**	NE	**77**	**290**	<5.0	<5.0	<5.6	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
2-Chlorophenol	ug/L	NE	NE	**1110**	NE	**81**	**150**	<5.0	<5.0	<5.6	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
2-Methylnaphthalene	ug/L	NE	NE	**59**	NE	NE	NE	<5.0	<0.50	<0.56	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**0.58**
Acenaphthene	ug/L	NE	NE	**2950**	NE	**670**	**990**	<5.0	<0.50	<0.56	<0.50	**0.90**	**1.5**	**2.5**	**8.3**	**0.81**	**1.5**
Acenaphthylene	ug/L	NE	NE	**1430**	NE	NE	NE	<5.0	<0.50	<0.56	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Anthracene	ug/L	NE	NE	**7850**	NE	**8300**	**40000**	<5.0	<0.50	<0.56	<0.50	<0.50	<0.50	**0.55**	**1.1**	<0.50	<0.50
Biphenyl (Diphenyl)	ug/L	**3.34**	**14.3**	**1.18**	NE	NE	NE	<5.0	<5.0	<5.6	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Carbazole	ug/L	NE	NE	NE	NE	NE	NE	<5.0	<5.0	<5.6	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Dibenzofuran	ug/L	NE	NE	**48.4**	NE	NE	NE	<5.0	<5.0	<5.6	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Fluoranthene	ug/L	NE	NE	**311**	NE	**130**	**140**	<5.0	<0.50	<0.56	<0.50	<0.50	<0.50	**1.1**	**0.91**	<0.50	<0.50
Fluorene	ug/L	NE	NE	**4370**	NE	**1100**	**5300**	<5.0	<0.50	<0.56	<0.50	**0.52**	**0.77**	**1.3**	**3.9**	<0.50	**0.75**
Naphthalene	ug/L	**17.2**	**72.3**	**0.722**	8.9	NE	NE	<5.0	<0.50	<0.56	<0.50	<0.50	<0.50	<0.50	<0.50	**3.5**	**6.1**
Pentachlorophenol	ug/L	NE	NE	**5.54**	NE	**0.03**	**0.04**	<5.0	<5.0	<5.6	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Phenanthrene	ug/L	NE	NE	**1430**	NE	NE	NE	<5.0	<0.50	<0.56	<0.50	**0.60**	<0.50	**2.2**	**5.8**	<0.50	**1.1**
Pyrene	ug/L	NE	NE	**1430**	NE	**830**	**4000**	<5.0	<0.50	<0.56	<0.50	<0.50	<0.50	**0.88**	**0.59**	<0.50	<0.50

NOTES:
TPH = total petroleum hydrocarbons
TPH-DRO = diesel range TPH
TPH-GRO = gasoline range TPH
TCL = Target Compound List
VOCs = volatile organic compounds
SVOCs = semi-VOCs
EPA 8260B = United States Environmental Protection Agency SW-846 analytical method
ug/L = micrograms per liter
mg/L = milligrams per liter
<1.0 = not detected above analytical method reporting limit (RL)
VDEQ = Commonwealth of Virginia Department of Environmental Quality
VDEQ-T3RGSL = VDEQ Tier III residential groundwater vapor intrusion screening level
VDEQ-T3CGSL = VDEQ Tier III industrial groundwater vapor intrusion screening level
VDEQ-T3CDSL = VDEQ Tier III construction direct (<15 feet) screening level
VDEQ-PDS = general permit discharge standard for petroleum contaminated water
VDEQ-T2PWSSL = VDEQ Tier II public water supply screening level
VDEQ-T2SWFSL = VDEQ Tier II surface water fresh screening level
NE = not established
Bold and right justification designates target compound was detected at a concentration above RL
Yellow highlighting designates target compound was detected at a concentration above the VDEQ groundwater screening level in at least 1 sample
Blue highlighting designates target compound was detected at a concentration above the VDEQ surface water screening level in at least 1 sample
Green highlighting designates target compound was detected at a concentration above the VDEQ groundwater and surface water screening level in at least 1 sample

TABLE 6. SUB-SLAB SOIL GAS ANALYTICAL RESULTS (DETECTIONS ONLY)

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

Sample ID:	Units	VDEQ-T3RSSG	VDEQ-T3ISSG	ICOR-SSG1	ICOR-SSG2	ICOR-SSG3	ICOR-SSG4
Sample Date:				12/5/16	12/5/16	12/5/16	12/5/16
VOCs TO15							
1,2,4-Trimethylbenzene	ug/m3	**210**	**867**	**6.5**	**6.3**	<25	**6.1**
2,2,4-Trimethylpentane	ug/m3	**NE**	**NE**	**8.6**	**9.9**	**63**	**11**
2-Butanone (MEK)	ug/m3	**17300**	**73300**	**11**	**18**	<37	**16**
Acetone	ug/m3	**10700**	**467000**	**46**	**260**	<240	**540**
Benzene	ug/m3	**103**	**433**	**2.4**	**3.0**	<16	**4.0**
Chloroform	ug/m3	**40**	**177**	**7.0**	<2.4	<24	**23**
Cyclohexane	ug/m3	**21000**	**86700**	**1.8**	**4.9**	**150**	**18**
Dichlorodifluoromethane	ug/m3	**333**	**1470**	**3.6**	**4.9**	<25	**8.8**
Ethylbenzene	ug/m3	**367**	**1630**	**7.5**	**7.9**	<22	**8.0**
Propylene	ug/m3	**10300**	**43300**	**9.9**	**8.5**	<43	**37**
Tetrahydrofuran	ug/m3	**7000**	**29300**	**22**	**28**	**26**	**29**
Toluene	ug/m3	**17300**	**73300**	**32**	**43**	**35**	**38**
m,p-Xylenes	ug/m3	**333**	**1470**	**27**	**28**	**47**	**29**
n-Heptane	ug/m3	**1400**	**6000**	**2.7**	**3.4**	<20	**5.3**
o-Xylene	ug/m3	**333**	**1470**	**14**	**14**	**26**	**15**

NOTES:
VOCs = volatile organic compounds
TO15 = United States Environmental Protection Agency analytical method
ug/m3 = micrograms per meter cubed
<0.86 = not detected above the analytical method reporting limit (RL)
Bold and right justification designates constituent was detected above the RL
VDEQ = Commonwealth of Virginia Department of Environmental Quality
VDEQ-T3RSSG = VDEQ Tier III residential Shallow/Subslab Soil Gas screening Level
VDEQ-T3ISSG = VDEQ Tier III industrial Shallow/Subslab Soil Gas Screening Level
NE = not established
Bold and center justification designates target compound was detected at a concentration above RL
Yellow highlighting designates target compound was detected at a concentration above the VDEQ screening level in at least 1 sample

TABLE 7. DEEP SOIL GAS ANALYTICAL RESULTS (DETECTIONS ONLY)

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

Sample ID:	Units	VDEQ-T3RDSG	VDEQ-T3IDSG	VDEQ-T3CSG	ICOR-DSG1	ICOR-DSG2	ICOR-DSG3	ICOR-DSG4
Sample Date:					12/5/16	12/5/16	12/5/16	12/5/16
Depth Collected (feet bgs):					6 - 6.5	5 - 5.5	3.5 - 4	2 - 2.5
VOCs TO15								
1,2,4-Trimethylbenzene	ug/m3	**630**	**2600**	**9689**	**7.7**	**8.2**	**4.8**	<25
1,3,5-Trimethylbenzene	ug/m3	**630**	**2600**	**1390**	<2.5	**2.9**	<2.5	<25
2,2,4-Trimethylpentane	ug/m3	**NE**	**NE**	**NE**	**490**	**4.0**	**11**	**400**
2-Butanone (MEK)	ug/m3	**52000**	**220000**	**91700**	<3.7	**5.6**	**4.1**	**180**
4-Methyl-2-Pentanone	ug/m3	**31000**	**130000**	**365000**	<5.1	<5.1	<5.1	**300**
Acetone	ug/m3	**320000**	**1400000**	**2450000**	**65**	**43**	**30**	**19000**
Benzene	ug/m3	**310**	**1300**	**7500**	**18**	**130**	**5.4**	<16
Carbon Disulfide	ug/m3	**7300**	**31000**	**55200**	**76**	**53**	<31	<310
Chloroethane	ug/m3	**NE**	**NE**	**NE**	<1.3	<1.3	**1.5**	<13
Chloroform	ug/m3	**120**	**530**	**2660**	**5.9**	**17**	**5.5**	<24
Cyclohexane	ug/m3	**63000**	**260000**	**1890000**	**190**	**68**	**73**	**320**
Ethylbenzene	ug/m3	**1100**	**4900**	**358000**	**7.2**	**2.7**	**5.8**	<22
Naphthalene	ug/m3	**31**	**130**	**416**	**6.7**	<2.6	<2.6	<26
Propylene	ug/m3	**31000**	**130000**	**229000**	**450**	**640**	**870**	**600**
Toluene	ug/m3	**52000**	**220000**	**539000**	**20**	**8.1**	**18**	**22**
m,p-Xylenes	ug/m3	**1000**	**4400**	**12300**	**22**	**11**	**21**	<43
n-Heptane	ug/m3	**4200**	**18000**	**51700**	**20**	**9.8**	**8.6**	**130**
n-Hexane	ug/m3	**7300**	**31000**	**230000**	**100**	<35	<35	**640**
n-Propylbenzene	ug/m3	**10000**	**44000**	**139000**	**2.5**	<2.5	<2.5	<25
o-Xylene	ug/m3	**1000**	**4400**	**12200**	**13**	**7.5**	**12**	<22

NOTES:
bgs = below ground surface
VOCs = volatile organic compounds
TO15 = United States Environmental Protection Agency analytical method
ug/m3 = micrograms per meter cubed
<1.3 = not detected above the analytical method reporting limit (RL)
Bold and right justification designates constituent was detected above the RL
VDEQ = Commonwealth of Virginia Department of Environmental Quality
VDEQ-T3RDSG = VDEQ Tier III residential Deep Soil Gas Screening Level
VDEQ-T3IDSG = VDEQ Tier III commercial Deep Soil Gas Screening Level
VDEQ-T3CSG = VDEQ Tier III Construction Soil Gas Screening Level
NE = not established
Bold and center justification designates target compound was detected at a concentration above RL
Yellow highlighting designates target compound was detected at a concentration above the VDEQ screening level in at least 1 sample